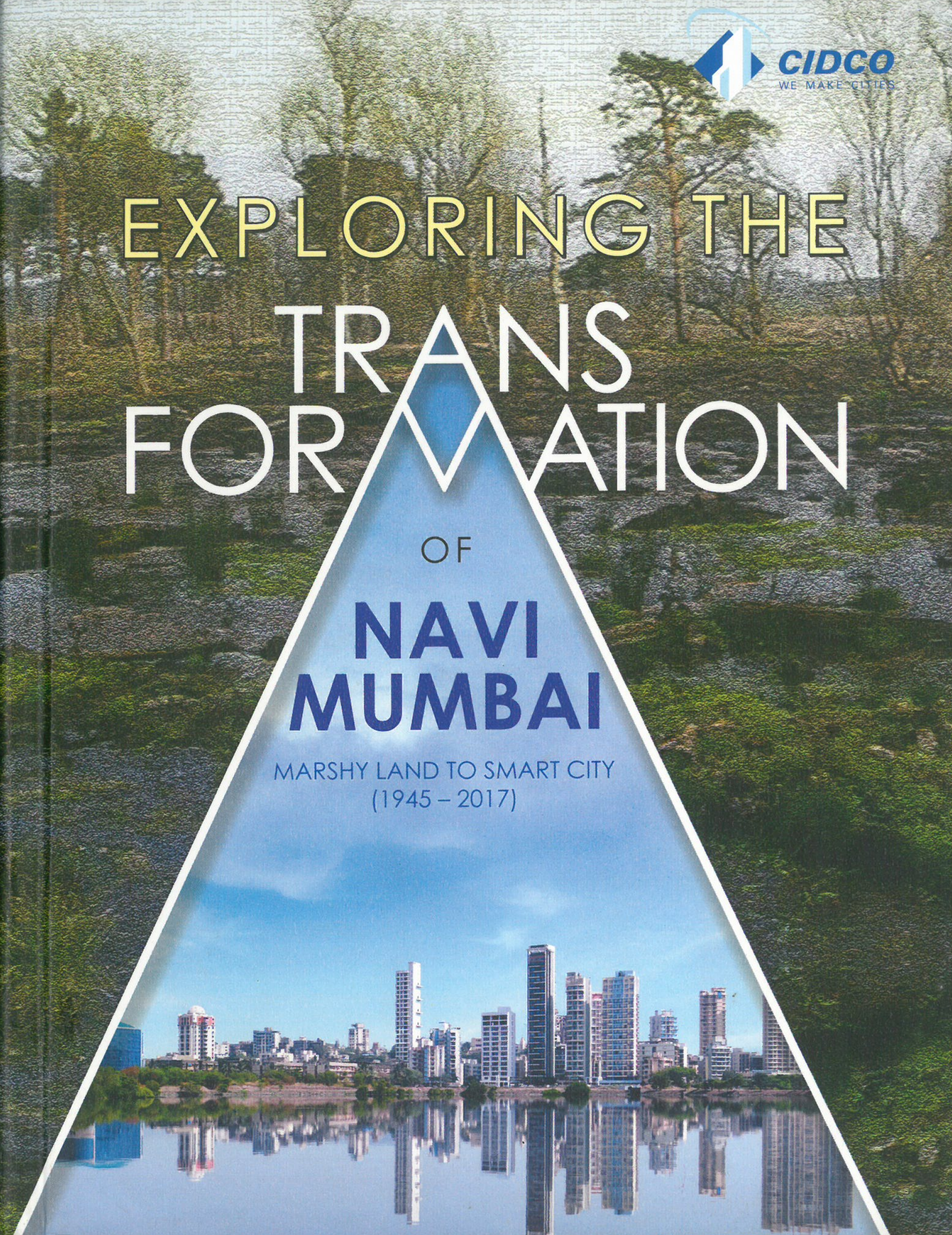
CIDCO
WE MAKE CITIES



EXPLORING THE TRANSFORMATION OF NAVI MUMBAI

MARSHY LAND TO SMART CITY
(1945 – 2017)

Prelude

In the making of Navi Mumbai, there are several things that should never go un-noticed for it has set new precedents. 'Exploring the Transformation of Navi Mumbai' certainly serves this purpose.

It is also the history of an organization, CIDCO that has evolved an indigenous model of urban development. In the process a yardstick for the legitimate, considerate and respectable rehabilitation and compensation package for the Project-affected People (PAP) was created. The formula of 'land for land compensation' for PAPs that is known as the '12.5% Scheme', is not just a part of the history of Navi Mumbai but history in itself.

In our endeavours to make the book 'near fool-proof', flawless and authentic, meticulous efforts have been taken to track down the chronology. All the information has been corroborated by official records. As the final draft got ready, we invited the veterans to give final touches to the book. The present Chief Engineer Mr. K. K. Varkhedkar and Chief Architect and Planner Mr. Ramesh Dengale were also called. It turned out to be a rare get-together of past and present officers.

We are thankful to these veterans, for spending their valuable time for the 21st October 2016 meeting – the first of its kind – making it historic, memorable and very useful. It was attended by Mr. Shirish Patel (the first technical employee of the Corportion), Mr. Ramakant Jha (former Head of Transportation & Communication), Mr. Ardhendu Bhattacharya (former Chief Economist), Mr. Anil Sule (former Architect and Town Planner), Mr. P. M. Deshpande (former Chief Engineer and General Manager (Tech)), Mr. P. S. Ambike (former Chiefengineer) and Mr. Suhas Gokhale (former senior planner).

As a tribute, we have dedicated a page to the real pillars of progress – the team of eight experts: the first MD Mr. J. B. D'Souza, the first technical employee Mr. Shirish Patel (Director of Planning and Works), Mr. Charles Correa (Chief Architect), Dr. M. S. Gore (social planning), Dr. Phiroze Medhora (economist), Mr. Kirit Parikh (Operations Research) Mr. K.P. Battiwala (consultant) and Mr. Vijay Tendulkar (consultant).

For the great task of designing the book in most befitting manner we deliberated on a few options and the one name that had no option was that of world-renown calligrapher Mr. Achyut Palav. He has been residing in Navi Mumbai for over three decades and has taken the city beyond Indian horizons. His designing has certainly added value to this book.

Looking back at all the stages of the evolution of the book, I would say that it is really a major project of CIDCO. Hope this book will serve as a lighthouse for the coming generation. There is always scope to do better till perfection is attained. We would be grateful to every reader who points out any miss, gives relevant information or valuable suggestion.

In our desperate search for archive photos to showcase the conditions of pre-development and the early development many hands came forward. We extend our sincere appreciation and gratitude to all these people for their valued contributions:

Mr. Shirish Patel, *('Multi-disciplinary Organisation')*

Mr. Ramakant K. Jha, *('Wings for Development')*

Mr. P. M. Deshpande, *('Innovations in Engineering')*

Mr. Ardhendu Bhattacharya, *('Reserve Price Mechanism')*

Mr. Anil Sule, *('Initial Planning', 'Shifting Wholesale Markets' & archive photos)*

Mr. Dilip D'souza, son of late J. B. D'souza *(archive photos)*

Mr. Jayshankar, Tata Institute of Social Sciences, Mumbai *(photo of late Dr. M. S. Gore)*

Mr. Rohington Medhora, son of late Dr. Phiroze Medhora *(photo & profile of Dr. Medhora)*

Mr. Khushroo Battiwala, grandson of late K. P. Battiwala *(photo & profile of Mr. Battiwala)*

Mr. Ajit Jha & Mr. Baban Panchal, Ideal Creative Solutions, Prabhadevi *(scanning of old negatives)*

Mr. A. V. Dole *(identification of personalities in archive photos)*

Dr. Mohan Ninawe
Senior Public Relations Officer

The Story Behind...

There is a story behind this history. The seed was sowed in 2000 while working as a copy and content writer for CIDCO on behalf of an advertising agency. It started germinating at the fag-end of 2014 when preparations were going on for the next year calendar. Glancing at some good photographs, senior PRO Dr. Mohan Ninawe said, "this would make a nice coffee table book".

I started working on it and soon encountered with the paucity of documentary evidences. Somewhere in April 2015. The quest for authentic information led me to company's annual reports and in-house magazine 'Nirmiti' which changed my focus resulting into 'Exploring the Transformation of Navi Mumbai' (ETNM). Survey reports and other books published by Statistics Department provided great insight and vital data.

As the book advanced many offered helping hands. Former Personnel Manager Mr. A. R. Jadhav, considered as CIDCO's encyclopaedia, helped confirm the period of some important incidents. Senior journalist, Mr. Jagdish Tandel from Uran who was associated with late D. B. Patil provided the first-hand account of the Jasai Agitation. Mr. Nilesh Tandel, a self-developed ornithologist, provided vital information about birds in the area and Mr. Narendra Hire, provided social insight with his deeper social knowledge. . I also owe a lot to linguistic scholar, Dr. Venkatrao G. Bilolikar for his valuable guidance.

Still there were some loose ends; mending them was a real challenge. Senior Planner Mr. Suhas Gokhale and Librarian-Documentation Officer Mr. Suhas Joshi, a person always surrounded by books and people, helped me get access to some veterans, ex-planners and engineers. Meetings with veterans like Mr. Shirish Pate, Mr. R. K. Jha, Mr. P. S. Ambike, Mr. Anil Sule, and Mr. P. M. Deshpande provided depth to my understanding of the subject. Their testimonies and inputs have made the book livelier.

In my endeavour to expand the horizon of the book content, I shared the thought with my old pals Prof. Pradnya Pawar, Prof. Veena Sanekar and Mrs. Pavina Mandke. In the last lap of the book I had to undergo by-pass. Contingencies of life are inevitabilities. One has to live it. I took it in my stride as it came. I met some Good Samaritans and friends indeed. Some mobilized funds, some kept me going in the same zeal and zest by moral support. I don't know some of them but to all I owe a lot. They are: Narayan Harilikar, Dilip Chavare, Sanjay Jog, Aniket Joshi, Ravikiran Deshmukh (journalists); schoolmate Ramesh Bamble (DMC, Hydraulic of BMC); Vidyadhar Waghmare, Narendra Rane (then Chairman, Siddhivinayak Trust), Ashok Jadhav (Lalbaugcha Raja Trust), Fr. Sunder (Archdiocese of Bombay), and my surgeon Dr. Krishna Prasad. My better half Dr. Sanjeevani and daughter Samruddhi, who bore the brunt of the life at a tender age, boldly stood by me and helped me to rise and complete the book.

I am thankful and grateful to VC and MD, Mr. Bhushan Gagrani for giving quick clearance to designing that required special approvals; his predecessor Mr. Sanjay Bhatia and then Jt. MD Mrs. V. Radha during whose tenure I took up this assignment. Present Jt. MDs, Mrs. Prajakta Lavangare-Verma, Mr. Rajendra Chavan as well as Chief Vigilance Officer (Addl. DIG) Mr. Vinay Kargoakar took keen interest in the book.

It's a pleasant feeling that my 10-year association with CIDCO has earned me a sweet fruit – ETNM. The exultation is beyond the bylines bliss of my journalistic career.

Sudheer Brahme
PR Consultant, CIDCO

Foreward

1970 was perhaps one of the most momentous years in the history of India's urbanization; the proposal to plan and develop Navi Mumbai through an organisation called City and Industrial Development Corporation of Maharashtra (CIDCO) was formally approved in this year. This paved the way for a new city named Navi Mumbai, which later was distinctive from other major new towns developed in India till then. Bhubaneswar, Chandigarh and Gandhinagar were essentially developed as new cities to act as state capitals. Similarly, CIDCO as a government-owned company to plan and develop Navi Mumbai was an institutional innovation unlike usually adopted form of statutory authorities.

The genesis of Navi Mumbai as it has evolved over the last 46 years is summarized in an article written by Charles Correa, Shirish Patel and Praveena Mehta entitled "Planning for Bombay" published in MARG in 1965. However, the authors did not stop at publishing the article but persevered to ensure that it was formally endorsed in the Mumbai Metropolitan Regional Plan in 1970 and CIDCO was established. The dominant paradigm at the time when the Regional Plan was being formulated was to have smaller self-contained new towns around the metropolis to contain the growth of the central city.

Navi Mumbai was distinctly different. The diagnosis was that Mumbai would continue to grow by employment in offices and not in factories. Given the peninsular geography of Mumbai, such growth of offices would have to be diverted to the mainland across the harbour. Offices unlike industries need agglomeration and therefore a larger city. Navi Mumbai was conceived to be a city for the population of 2 million by 1991.

Concepts that are expected to be realized over a long term, inevitably undergo changes and can never be exactly implemented as originally conceived. That is precisely why documenting such efforts is important for enabling those who wish to learn from history. This painstakingly chronicled history of Navi Mumbai and CIDCO is significant in this context.

Nuances like multidisciplinary composition of CIDCO, innovative approaches to pricing of land and financing suburban rail, experiences of designing the early development and the wholesale market and engineering challenges and innovative practices, captured in the book makes it eminently readable. For a discerning reader, able to read between the lines, a constant struggle that CIDCO had and continues to have for attracting economic activities to Navi Mumbai is perceptible. Initially it was observed that Mumbai grew on account of its industries, port and government. In case of Navi Mumbai, industries were already there and port was planned. It was therefore argued that if government moves to Navi Mumbai, it would recreate the DNA that caused Mumbai's growth in Navi Mumbai.

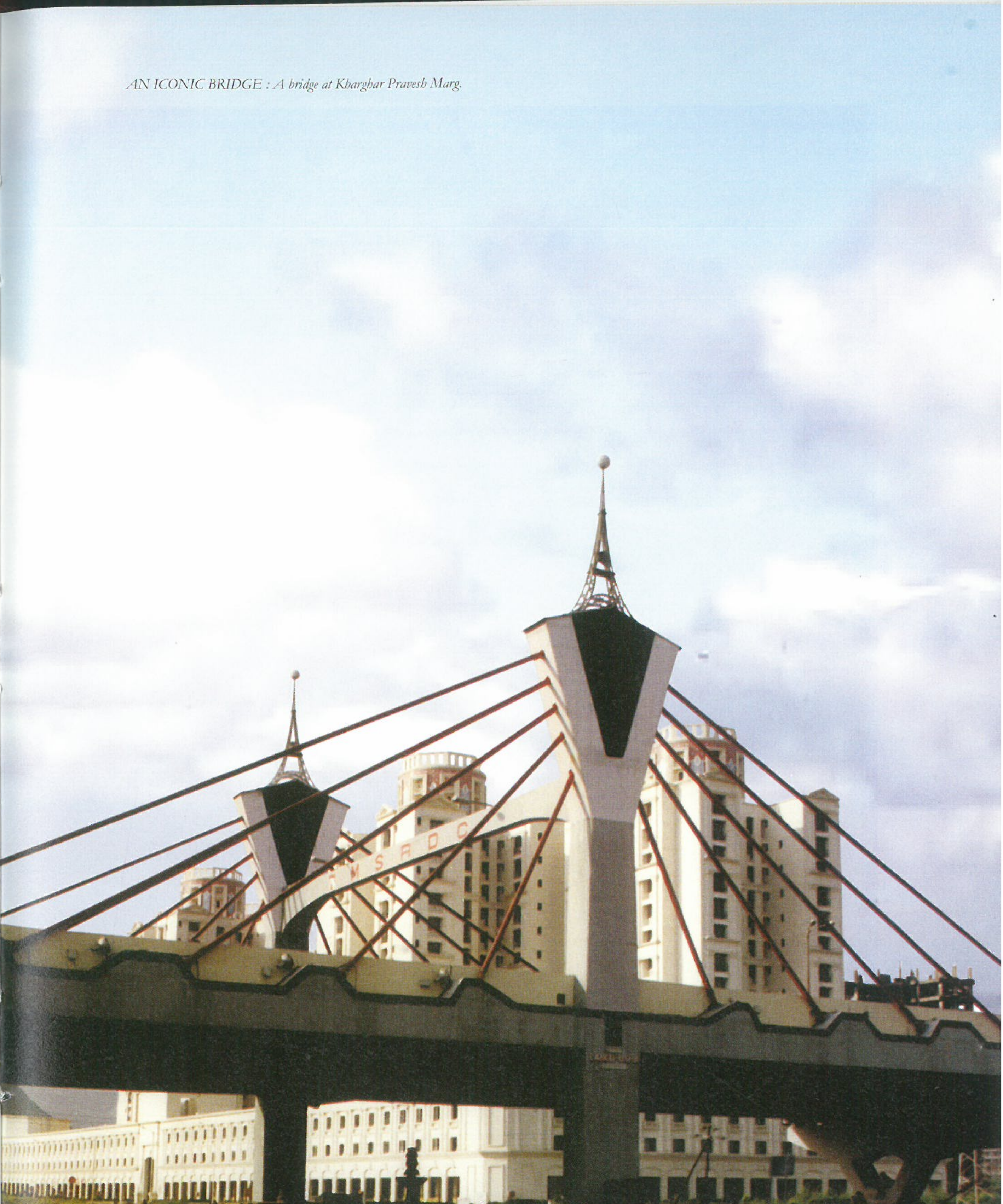
CIDCO carried out a survey of public sector offices in Mumbai to identify the ones that could move to Navi Mumbai, short of moving the seat of government. However not many government offices that mattered moved. Attention then was steered to relocating wholesale trade from Mumbai. Markets in agricultural produce were successfully relocated but the tale of Iron and Steel Market is not so happy. With the extension of suburban rail services up to Panvel, Mumbai's housing market expanded to Navi Mumbai – a trend that initial planners did not favour.

During the 1980s and 1990s, the manufacturing sector declined in both Mumbai and Navi Mumbai. In the following decade when Government of India promoted Special Economic Zones (SEZ), CIDCO caught on the opportunity given the presence of the port and the planned airport. However, with the decline of western economies, the prospects of SEZs dimmed. Fortunately in the meantime, the manufacturing activities made room for Information Technology and Biotechnology (IT and BT). Now perhaps the hopes are pinned on the new airport to boost Navi Mumbai's economy. Whether Navi Mumbai would acquire economic growth in its own right or continue to be an extended housing market of Mumbai is a question only future could answer.

The author has not relied just on the official documents and reports; moreover not to leave any stone unturned to authenticate the information and to corroborate that despite the paucity of documentary evidences, he approached many senior officials of CIDCO to obtain their personal recollections of the period they worked in CIDCO. Unfortunately, many officials who contributed during the early years of CIDCO live no longer. Dependence on such personal recollections exposes the limitations or outright absence of systematic archives in our public institutions. For example, the concept of 'Woodland Corridors' articulated by late D. G. Parab finds no place here.

This chronicle of CIDCO would be of immense interest to students of urban planning and development, urban economics and public policy and to public officials interested in experiences of institutional design. At the same time, a general reader interested in Mumbai and its history would also find a reading of the book rewarding.

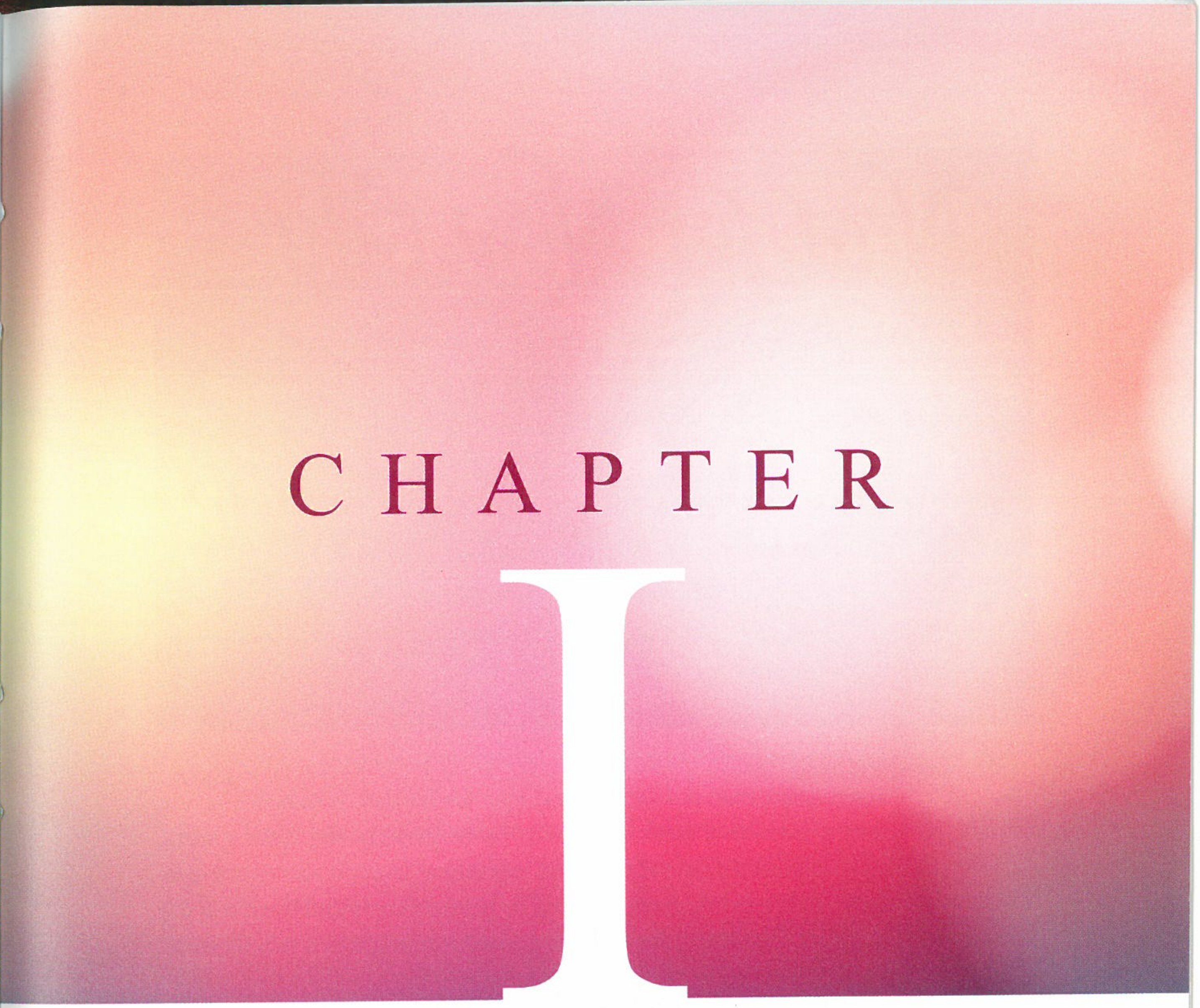
Vidyadhar Phatak
Dean, Faculty of Planning, CEPT University



AN ICONIC BRIDGE : *A bridge at Kharghar Pravesh Marg.*

WINGED VISITORS OF WINTER : Flamingos at Creek Behind NRI Complex provide to bird-watchers every winter.

GOD'S ABODE : A temple amidst the lush green and serene atmosphere behind Artist Village.



CHAPTER I

NEED FOR A NEW CITY
(1945 to 1969)

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Need for New City

~1945-1969~

Men are mortal. So are ideas. An idea needs propagation
as much as a plant needs watering otherwise
both will wither and die.
-Dr. B. R. Ambedkar

INTRODUCTION

Forty-seven years may not be a period ripe for history. It may not be the perfect past, but a transition period. Almost three generations have grown. The first one is nostalgic, more in the mood of dejection. Today it's on extinction. The second one is on the brink, remembering its predecessors and watching the growth of successors. The third, the present generation might not exactly recall the times of the first generation of their grandfathers.

MARSHY LAND : The city periphery, part of the North Konkan region, was full of marshy land as it used receive 2500 to 3500 mm rainfall during monsoon.

SOMETIME AGO : Gone are those days when women were fetching drinking water in utensils on their head or washing clothes in common ponds or wells.

There was a period of uncertainty of future; non-acceptance to new ideas and concepts; rejection, protest and mayhem. Amicable acceptance arrived gradually. This paved the way for the transition and transformation of a legacy, emergence of new culture and growth of an organisation, CIDCO. Over the years, multi-faceted organisation has earned the reputation of a 'premier town planning and development authority in the country'!

Where there was marshy land, paddy fields and salt pans nearly five decades ago; a glimpse from the bird's-eye view today showcases bridges, skywalks, architectural marvels, greenery, water bodies and much more. Village women are no longer fetching drinking water in utensils on their head or washing clothes in common ponds or wells.

Agri and Koli communities are the sons of the soil. They are less known for farming except for the paddy cultivation especially during the monsoon, naturally because of abundant of rains. Fishing remains their main traditional business that has been passed on from generation to generation. However, with the emergence of rurban culture BMWs and SUVs have replaced cattle in the courtyards of the shacks and mud-brick houses with Mangalore-tiled roofs.

SALTPAN : The salt produced in this area used to be supplied to several countries adding taste to their daily bread.

From New Bombay, as it was initially known, to Navi Mumbai is a great metamorphosis – a long journey of establishing self-identity. The first time it earned the recognition was after three decades when the National Geographic Channel reckoned it in the 'Super Cities of the World' series.

The idea of a new city adjacent to Mumbai is the brainchild of Mr. H. Foster King, an architect and planner of the Gregson, Batley and King Company. He was also a partner of the company. Mr. King had foreseen the consequences of population explosion much earlier in the pre-Independence Era. On 14th June 1945 in his speech at the Indian Institute of Architects he asserted, "It is the time to think of setting up a city on the East of Bombay across the (Thane) harbour". [1]

In 1947, an American Architect and Town Planning Consultant Mr. Albert Mayer and then engineer of Bombay Municipal Corporation Mr. N. V. Modak, published a paper 'A Master Plan in Outline for the New City.' The chief engineer, later designed the 1,28,925-ML dam that supplies drinking water to Mumbai. As a befitting tribute, it was later named Modak Sagar Dam. Mr. Modak also served as a member of the Bombay City and Suburbs Post-war Development Committee that was formed in 1945.[2]

Mr. Mayer-Modak focused sharply on the issue of population congestion, with the major concern being traffic flow. They suggested moving industries to the peripheries of Greater Bombay and the creation of a new township at Bassein (Vasai). The writers admitted that "it is just an envelope to be filled with details and not a final blueprint". They also recommended connecting the hinterland at Uran via a bridge from Trombay, implying East-West extension of the city instead of South-North.

In 1948, Renowned Economist and Social Thinker Prof. Dhananjay Ramchandra Gadgil, in his paper on the future of Mumbai city, highlighted the problems of rising population and its fallout on city's infrastructure. He recommended curbing industrialization in Mumbai setting 1941 as the cut-off year. The industries set up thereafter should be shifted beyond the limits of Ambarnath suburb, he suggested.[3]

GLOBAL BOOM

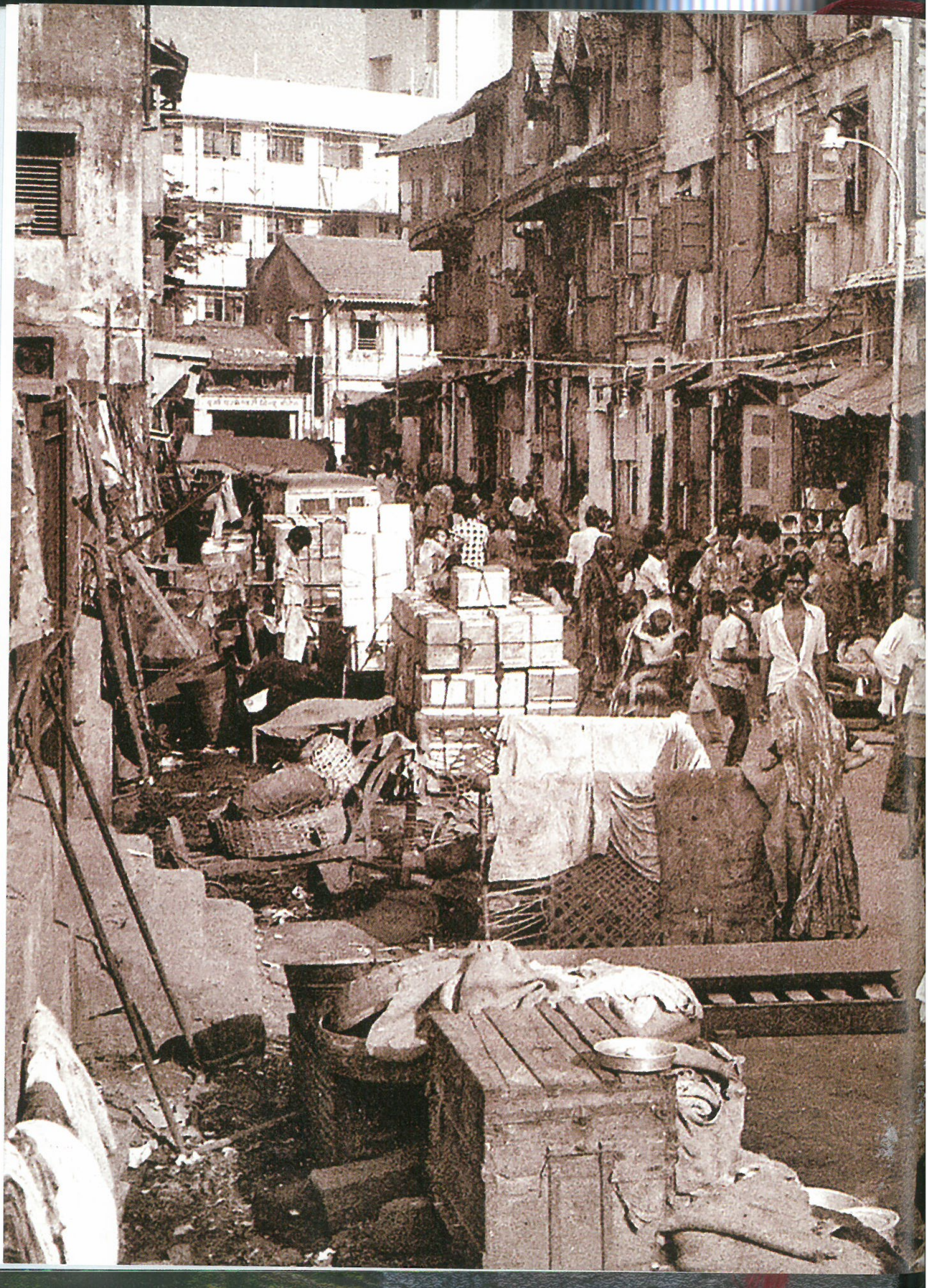
Even as the British Rule was challenged and the struggle for Indian Independence was at its peak, what could have led Mr. King to think of a better city near Bombay to take a share of rising population was the glaring issue faced by most cities in the world. Industrial Revolution and Colonization changed the cities into employment centres giving rise to slums.

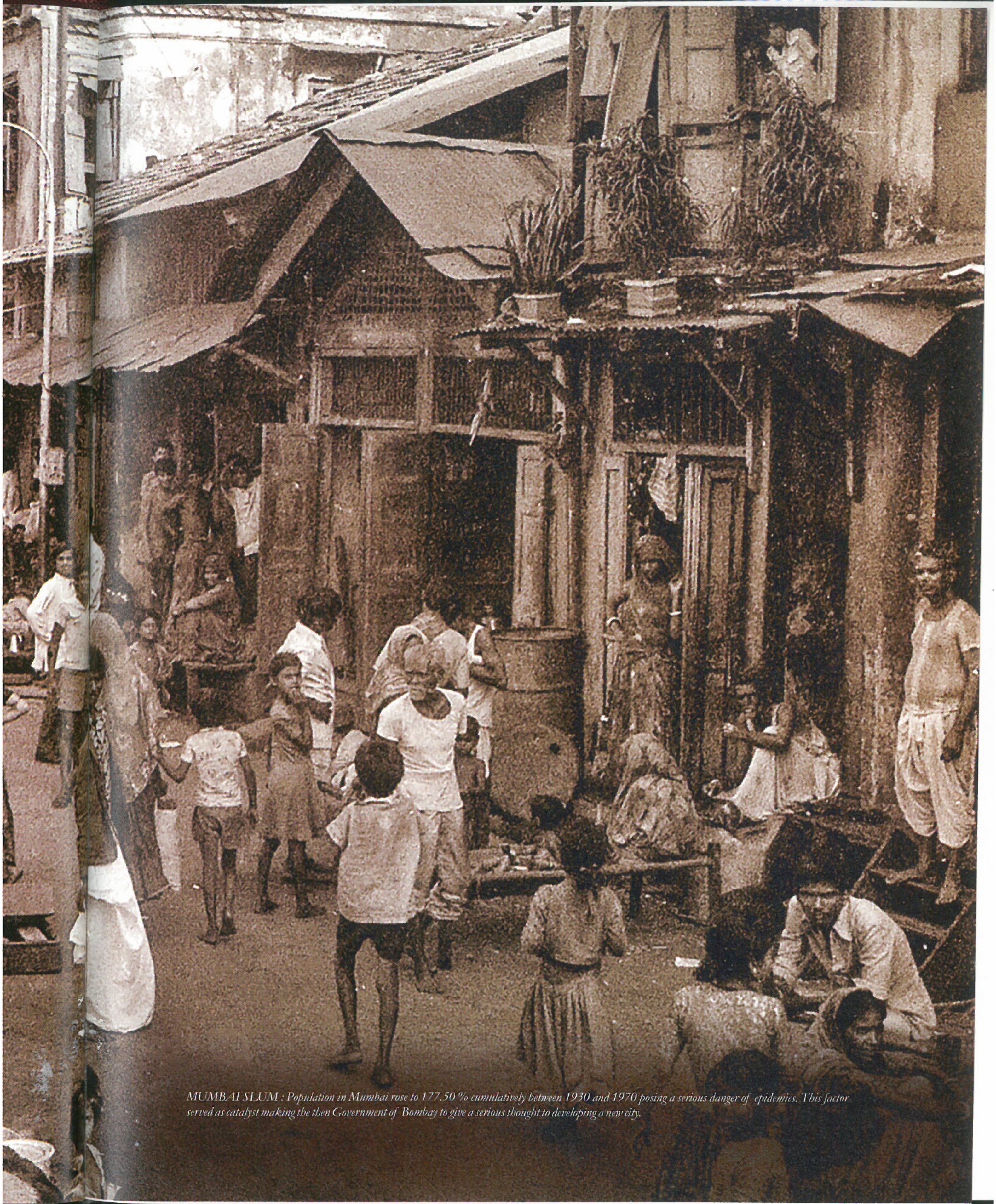
The revolution changed the basic character of human civilization. The ancient cities emerged and flourished on the banks of the rivers due to their agrarian nature while in the modern times, industries became the magnet, providing employment for skilled and unskilled workers. This gave a rise to the trend of urbanization.

Dependency on rural areas for the need of food diminished gradually. The availability of opportunities in urban area to accumulate wealth resulted in the increase in purchasing power substantiated by the importance of urbanization. By World War II (1939-45), developing nations revised their policy on rural-urban interdependence.[4]

The changed scenario transformed the cities globally. After World War II, the ugly faces of cities became more visible. This face is called the 'squatter' or slum, the term differs from country to country, but the problem remains the same.* The misery of slum-dwellers' life made Morris Juppenlatz to equate it with the dreaded "plague" as described by Albert Camus in his novel of the same name. However, it is an inevitable global phenomenon. The plight of the alien urban people manifests the poor understanding of the needs of the migrating population and inability to estimate the future of the increasing population.

The number of slums swelled and expanded in developing cities world over, cramming the urban areas, increasing the population density that crossed the 100 million mark in 1960 and the number was estimated to exceed three times in the next two decades if the slum-rise continued unabatedly. The United Nations Economic and Social Council (UNESCO) took very serious note of the scenario and passed a resolution in 1967 urging its member-states to undertake practical pilot programmes in cooperation with the Secretary-General and United Nations' concerned agencies to improve the living conditions in slums. The UN warned the countries that if the problem remains unheeded, it





MUMBAI SLUM : Population in Mumbai rose to 177.50 % cumulatively between 1930 and 1970 posing a serious danger of epidemics. This factor served as catalyst making the then Government of Bombay to give a serious thought to developing a new city.

will be measured in economic loss and the deterioration of our civilization. We will have "lost the peace".[5]

It was probably on this backdrop, Mr. King conceived the notion of the neighborhood city for Mumbai as the then prevailing conditions on increasing slums in the city were pathetic. The situation also could have driven the first Prime Minster of India Mr. Jawaharlal Nehru, to think of developing a planned city of Chandigarh.

BOMBAY UNLIMITED

In 1945, the periphery of Bombay was expanded to make it Greater Bombay with the promulgation of the Greater Bombay Laws and Bombay High Court Act. It encompassed the Towns and Islands of Bombay, the limits of the port of Bombay, the limits of the boroughs of Bandra, Parle-Andheri and Kurla and the municipal districts of Ghatkopar-Kirol and Juhu, together with 42 other villages of the Bombay Suburban District. In the same year, the Bombay City and Suburbs Post-war Development Committee was appointed to report on town planning and on the development of the suburbs.[6]

Post-Independence 25 years witnessed a vertical growth of urban population; Mumbai (then Bombay) was not an exception to it. In the four decades of 1941 to 71, population in the State textile capital was constantly on the rise. Population of Greater Bombay rose from 2.966 million in 1951 to 4.152 million in 1961, in 1971 it further rose to 5.970 million. In the first decade the growth was 40 per cent while in the second decade it was 43.80 per cent.[7] Cumulative rise in Mumbai population between 1930 and 1970 was 177.50.

Year	Population	Rise in %
1941	18,01,356	28.87
1951	29,94,444	66.23
1961	41,52,026	38.66
1971	59,68,546	43.74

Source: Julya Mumbaicha Prashna, pg 28

City's increasing industrial and commercial importance attracted the people coming here from other parts of the county in search of livelihood. Besides, there were physical limitations to the growth of the city built on long and narrow peninsula, which had very few connections with the mainland in the North at Thane and Bhayandar. The population explosion posed serious health hazards making the city more prone to epidemics.

Seventy-five years ago, the Black Death epidemic of bubonic plague had given bitter doses to the then British Rulers. In September 1896, the first case of bubonic plague was detected in Mandvi by Acacio Gabriel Viegas. The 1896 Plague and its aftermath that lasted for nearly one-and-half year left nearly 2,000 people dead every week through the rest of the year. Textile mill workers bore the brunt of the highly contagious disease the most.

The death toll rose to 183,984 between 1896 and 1914. Many fled the city leading to a drastic fall in the population of the city. As per the 1891 census, the population of Bombay was counted to be 8,20,000 which came down to 7,80,000 in 1901. No remedy was available until Waldemar Mordechai Wolff Haffkine, a Russian Jew, risked his life by testing anti-plague vaccine on himself to save thousands in July 1892. He was knighted in Queen Victoria's Diamond Jubilee year Honours in 1897. The Governor of Bombay invited W. M. Haffkine, who had earlier formulated a vaccine for cholera, to do the same for the epidemic. A research laboratory was setup at the J. J. Hospital, now named "Room No.000" and the building houses a blood bank. It was moved to the Government House in Parel in 1899 under the directorship of Haffkine and the institute devoted to research on vaccines is named after him.

In 1900, the mortality rate from plague was about 22 per thousand. In the same year, the corresponding rates from tuberculosis were 12 per thousand, from cholera about 14 per thousand, and about 22 per thousand from various other illnesses classified as "fevers". On 9 December 1898, the Bombay City Improvement Trust was created by an act of the British Parliament. It was entrusted with the job of creating a healthier city. One of the measures taken by the BIT was the building of roads, like Princess Street and Sydenham Road (now Mohammed Ali Road), which would channel the sea air into the more crowded parts of the town.

Due to insular nature, the city grew up vertically taking the natural diversion since it had horizontally reached to a dead-end. This gave rise to suburbs. The haphazard growth of residential units resulted in meagre civic amenities such as good drainage, recreation and playground facilities for children, school facilities, hospital and other medical facilities. Industrial and residential areas sprung up mingling with each other resulting in certain health problems.[8] Slums like Dharavi, tagged as the largest slums in Asia, had sprung by this time.

On realising the emerging problems of population boom and consequent health hazards, the then Government of Bombay appointed a study group in 1958 to consider the problems of traffic congestion, deficiency of open spaces and play fields, shortage of housing and over-concentration of industry in the metropolitan and suburban areas of the city; and to recommend specific measures to deal with them.

The panel was chaired by the then Secretary of the Public Works Department, Mr. Sadashiv Govind Barve, who later had an illustrious career. On relinquishing the office of the Indian Administrative Services, he donned the chair of the Finance Minister of Maharashtra. He even defeated Mr. V. K. Krishna Menon, a stalwart statesman of the Nehru Era, in Lok Sabha elections from North-East Bombay, but died in plane in 1967 on the way to Delhi to take oath as a member of the parliament.

The Barve Group submitted its report in February 1959. One of its major recommendations was that a rail-cum-road bridge be built across the Thane Creek to connect peninsular Bombay with the mainland. The Group felt that the bridge would accelerate development across the creek, relieve pressure on the city's railways and roadways, and draw away industrial and residential concentrations eastward to the mainland. The Group emphasized on the orderly and planned development.

SERIOUS COGNIZANCE

On 1st May 1960, the State of Maharashtra was born. The census of 1961 found 38.66% rise in population. Migrants in Mumbai were 64%. Employees in the State Government offices rose to 35% between 1961 and 1967. In 1964, percentage of industrial workers was 13.3.[9] Meanwhile the Bombay Municipal Corporation published the Development Plan for the city in 1964. The 700-crore plan envisaged for 20 years did not consider the possibility of substantial eastward growth across the creek, obviously because the area was out of the BMC jurisdiction.[10]

Pondering over the grave situation arising out of the population explosion and taking a serious cognizance of the Barve Panel Report, the government in March 1964 appointed a well-known socio-economist, Prof. D. R. Gadgil, who had dealt with urban issues. The task given to the committee was to formulate broad principles of planning for the metropolitan regions of Bombay (now Mumbai), Panvel and Pune.

He recommended decentralization of industries in the State so that Mumbai's history should not be repeated elsewhere. He even asked for a ban on any further industries in Mumbai. Mr. Gadgil was of the view that the population of the Island city of Mumbai be capped at 24 lakhs. The panel for the first time introduced the concept of the urban centre, what today is known as the growth centre.[11] It also recommended the creation of Regional Planning Boards for notified regions, initially for Bombay and Pune regions for preparation and execution of such plans. To establish such boards, it also suggested Regional Planning Act.[12]

The Gadgil Committee submitted its report in March 1966. On receiving the report, the government passed Maharashtra Regional and Town Planning Act in the same year. The Act was brought into force in January 1967 notifying the Bombay Metropolitan Region. In June 1967, Bombay Metropolitan Region Planning Board was constituted under the chairmanship of an ICS officer, Mr. L. G. Rajwade.

The board outlined the draft Regional Plan in January 1970 and endorsed the earlier recommendations that the new metro-centre, New Bombay, as it was then called, be developed across the harbour. This alternative growth pole, as a counter-magnet to the office concentration taking place at the Southern tip of Bombay, would siphon off the over-concentration of jobs and population re-allocating them on the mainland, it opined.

In the meantime in 1965, Modern Architectural Research Group (MARG) journal published an article, 'Bombay – Planning and Dreaming' jointly written by Mr. Shirish Patel, Mr. Charles Correa and Mrs. Pravina Mehta. They showcased a plan for the new city in their well-drafted article.[13]

* Slums are called Zopadis in Mumbai, Bastis or Juggis in Kolkata and Delhi; in cities of Turkey like Istanbul, Ankara etc – Gecekondus; in Mexico – Jacales, in Panama City - Ranchos, in Brazil's Recife – Mocambos, in Sao Paulo and Rio de Janeiro – Favelas; in Porto Alegre – Cortico. In Tunisia - Gourbivilles, in Algeria – Casbah, in Casablanca and in other Moroccan cities – Bidonville.

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CHAPTER II

ORGANISING THE ORGANISATION

(1970 to 1972)

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Orgnising the Orgnisation

~1970-1972~

A function to each organ, and each organ
to its own function, is the law of all organisations.
-Herbert Spencer

WAITING ENDS

Thus a city that became the necessity in the late 60s of the 20th Century, led to the invention of the multi-disciplinary, multi-faceted and multi-dimensional City and Industrial Development Corporation of Maharashtra Ltd. (CIDCO). As a new city became an undisputed necessity; the State Government started preparations to welcome the baby, the proposed new city. Just as a cradle precedes the baby, canvas is readied before landscape painting; so is land required to carve out a city. So even before the planning authority for 'New Bombay' as it was notified[1] was established, the State Government published a notification on 4th February 1970 for acquisition of private land admeasuring 21,857 hectares covering 86 villages of Thane, Uran and Panvel Talukas. Nine more villages admeasuring 2,870 hectares were included in the project area in August 1973.

Finally on 17th March 1970, City and Industrial Development Corporation of Maharashtra Limited (CIDCO) was incorporated (No. 14574 of 1969-70) under the Companies Act 1956.[2] The State Government issued Resolution (GR No. IDL/5770/IND-I) to this effect on the next day notifying CIDCO as the New Town Development Authority (NTDA). It was a subsidiary of the State Industrial and Investment Corporation of Maharashtra Limited (SICOM). CIDCO started functioning with the subscribed capital of ₹ 10 lakhs and loan of ₹ 270 lakhs, from the holding company SICOM in 1970. CIDCO also borrowed ₹ 16,60,068.05 from SICOM in the same year.

Mr. J. B. D'Souza, a senior IAS officer, who had served as the Commissioner of the BMC, the first and the oldest civic body in India, was appointed the first MD of CIDCO on 24th March 1970. He ably laid the foundation of CIDCO and helped get its own identity during his near four-and-a-half year tenure that lasted till 13th August 1974.Mr. N. M. Wagle, a senior ICS officer who was SICOM's chairman was nominated by then Chief Minister Mr. Vasantraon Naik as CIDCO's chairman.[3]

MULTI-DISCIPLINARY ORGANISATION

Creation of a city means creating a sustainable habitat for human race. Cities are the yardsticks of evolution of human civilization. The material and non-material assets created by one generation is a legacy, a heritage for the coming generations. The evolution encompasses the whole gamut of cuisine and couture, dialects and languages, sports and religion, etc. Creation implies collective efforts; it is a symbiosis of ideas and concepts; intellect and technology; research and arts. This symbiosis needs people from different spheres of life. It was on this spine that CIDCO stood firm.

Its nature as the multi-disciplinary organisation was determined at the very outset. On taking charge of CIDCO, Mr. J. B. D'Souza appointed Mr. Shirish Patel as the first technical employee of the organisation, to lead the work of planning and execution in CIDCO. "He invited me, rather hand-picked me, perhaps knowing my contribution to the subject through my articles in the MARG in 1965 and in Times of India between 1964 and 1967", recollects Mr. Patel.

'There was a consensus among us that CIDCO appointed as the urban planning was not an architectural exercise, it has multi-dimensions; to be meaningful and effective it must give consideration to different spheres of life such as economics, social sciences and environment in addition to transportation and infrastructure planning. The visual aesthetics of architecture was just one component in the holistic approach', Mr. Patel adds.

Mr. D'Souza wanted a small team that could interact easily. So the team just had eight people, including the MD and Mr. Patel. Keeping this in mind, six well-known personalities from different walks of life were invited by CIDCO as advisors in the initial stage. Among them were Dr. Phiroze Medhora

(Economist), Dr M. S. Gore (Social Scientist), Mr. K. P. Battiwala (Engineer), Mr. Vijay Tendulkar (Playwright), Mr. Charles Correa (Architect) and Dr. Kirit Parikh (Operations Research).

These experts used to meet once a week, every Monday, for the first few years; later they met as and when required. They worked out the overall strategy and discussed the planning issues in the presence of the MD.[2] Even as they belonged to different faculties, their focus was on the issues of development of a new city and hence the logical differences in the thought process would end up at unanimous decision.

In this cordial and harmonious style of functioning, the team continued till 1973. This administrative setup helped CIDCO rope in cream of talents from the fields of planning, engineering and architecture as the first generation. Among them were three MBAs from IIM Ahemadabad – Vinod Sharma, Pankaj Baliga and Anil Manchanda. Mr. Xerxes Desai, on deputation from Tata Administrative Services (TAS), also lent his services to CIDCO strengthening CIDCO's character as a multi-disciplinary organisation.

Having been a special invitee on the Bombay Metropolitan Region Planning Board that recommended the formation of CIDCO, Mr. D'Souza had thorough knowledge of the issue relating to the proposed new city. Mr. Correa and Mr. Patel represented groups on New Towns and Restructuring Bombay.[4] Knowing the duo closely who had deeper understanding of the subject and had contributed their ideas for the new city earlier, D'Souza in his prerogatives and authority, appointed Mr. Patel as the Director of Planning and Works and Mr. Correa as the Principal Architect. Mr. Parikh was appointed in-charge of Operations Research.

The early senior planning team included Mr. D. G. Parab, Mr. Suresh Gogte and Mr. Vidyadhar Phatak. Mr. H. D. Kopardekar, a senior town planner was the first government officer from the department of Town Planning and Valuation Department, who was Planning Officer. Mr. Charles Correa was appointed the Principal Architect. Mr. Madhukar Y. Thackeray, a distant relative of late Balasaheb Thackeray, was Chief Planner. Mr. B. V. Doshi and others were on the regular role of CIDCO.

CIDCO, even at the initial stage encouraged higher studies and international exposure and sent many aspirant architects, planners for further studies, training and experience abroad. This naturally enhanced the abilities of the staff and imparted a much needed broader outlook and contemporary thinking in planning and architecture.

Mr. D'Souza also set the goals to acquire assets and utilize the borrowed funds for development without returns. In December 1971, CIDCO raised a loan of ₹ 12,08,17,000 through debentures of ₹ 1,000 each to manage the funds for development.[5]

Yet another IAS officer, Mr. P. C. Nayak was appointed the Additional Managing Director on 16th September 1972 looking after the land acquisition matters; he later became the Managing Director II and continued till 19th May 1974. This made CIDCO the first Public Sector Undertaking (PSU) with two managing directors. CIDCO fulfilled its corporate social responsibilities towards the sons of the soil – the Project Affected People (PAPs) considering their sacrifices. In all, 168 PAPs were absorbed in its service in the first year ensuring them livelihood. Nutrition programme for school children and mobile dispensary scheme were made operational.

OBJECTIVES OF CIDCO

CIDCO was given a mandate to undertake all development works and recoup the cost of development from the sale proceeds of land and constructed property. Based on the mandate, it set the following broad objectives:

1. To reduce the growth rate of population in Greater Bombay by absorbing immigrants who would otherwise come to Bombay; to attract some of Bombay's present population;
2. To provide physical and social services which would raise living standards and reduce disparities in the amenities available to different sections of the society;
3. To provide an environment which permits the citizens of the proposed new city to live fuller and richer life, free of physical and social tensions commonly associated with urban living;
4. To facilitate efficient and rational distribution of industries over the State, balancing development of urban centres in the hinterland;
5. To provide training and all possible facilities to the existing local people in the project area, to enable them to adapt to the new urban setting and actively participate in the economic and social life of the new city.[6]

The Mission

'TO PLAN AND DEVELOP URBAN
SETTLEMENTS SELF-SUFFICIENT WITH
PHYSICAL AND SOCIAL INFRASTRUCTURE
THAT COULD MEET RESIDENTIAL,
COMMERCIAL, SOCIO-CULTURAL
AND INDUSTRIAL NEEDS OF THE POPULATION
IN THE YEARS TO COME'.

With a view to fulfilling the objective to absorb immigrants who would otherwise come to Bombay, CIDCO segregated the city into urban settlements, each having physical and social infrastructure enough for the population of 50,000 to 2,00,000, the settlements called as nodes would be interconnected by road and rail network.

CIDCO, right from the initial days had a soft corner for the PAPs. Even the MD was open for talks with them. In compliance with the objective of facilitating the sons of the soil adapt to the changing urban setting and to actively participate in the economic and social life of the New City CIDCO opened training centres at Mahape, Belapur, Uran and Panvel for PAPs in 1971.

Except for Mahape, the other three are now serving as Industrial Training Institutes for Navi Mumbai residents, including the PAPs. In all, 290 PAPs were trained, 514 villagers were given jobs, 9 persons were granted loans to start their own trades and 37 new school rooms were built in 10 villages in this year. In 1972, in all 575 PAPs boys completed training. Total 1,935 boys were trained whereas 2,323 PAPs were absorbed in CIDCO till 1975.[7]

WINNING THE HEARTS: CIDCO from the very beginning has kept cordial relations with the sons of the soil who turned the PAPs (project-affected persons). Mr J. B. D' Souza is having a meeting with a delegation of the PAPs.

CITY PERIPHERY

The 344-sq. km. land that falls in the periphery of Navi Mumbai spreads over the parts of Thane and Raigad districts of Maharashtra that forms a part of Northern Konkan Region. On the East it starts with Kalundre village, on the West is the hill range that starts from Digha and runs up to Taloja; in the North is Digha village while Chanje village lies in the South, Dronagiri is on the South-East.

Geography : Along East, there are off-shoots of Parsik Hills running in North-South direction. The narrow belt of land between Thane Creek and the Parsik Hill range is about 2 kms in width. It starts at Digha in North and ends at Belapur in South. It is 2,560 hectares in area, 20 km long and about 2.0 km wide.

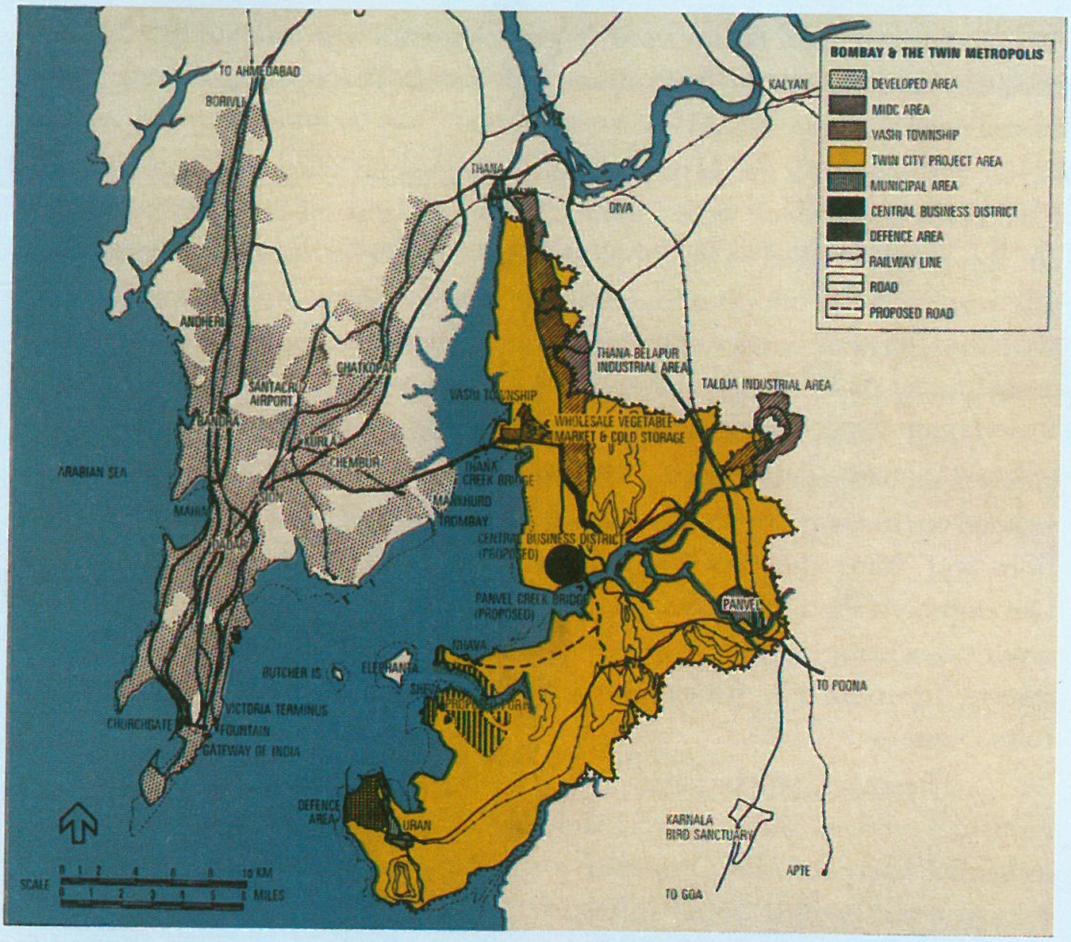
Geology : The rock formations in the region are derived mainly from Deccan Basalt and also from Granites, Gneisses and Laterite. The gently sloping coastal lowlands are observed in patches and are covered with moderately shallow to deep soils, mostly lateritic in nature, sometimes Oxidised to yellow Murram.

The soils of this region are highly saline in the vicinity of creeks and non-saline at other places. They are calcareous, neutral to alkaline in reaction (pH 7.5 to 8.5), clayey, with high amount of bases and have high water holding capacity (200-250 mm/mt.). The soils located on moderately sloping residual hills are lateritic in nature and show intensively leached surfaces. They are loamy and slight to moderately acidic (pH 5-6.5) with moderate base status (< 75%).

Topography : The top part of Western Konkan coast is a narrow coastal strip along the Western part of Sahyadris. It is bound on the East side by hillocks of 50-200 mt. height and on the West side by Thane Creek.

Rainfall : This area has sub-tropical monsoon climate of humid perhumid to semiarid and subhumid type. Overall climate is equable with high rainfall days and very few days of extreme temperatures. The rainy season is mostly confined to South-West monsoon with 80 per cent of the rainfall received during June to October (60-70 days). This area, on an average, receives 2500 to 3500 mm rainfall. The area has marine humid-perhumid climate with more humidity and less diurnal variations. Relative humidity varies from 41 to 97%.

Temperature : The mean annual temperature ranges from 25°C to 28°C. The mean maximum temperature of the hottest month in this area varies from 30°C – 33°C in April-May while mean minimum temperature of coldest month



varies from 16°C to 20°C. Extremes of temperatures, like 38-39°C in summer and H-14oC in winter, may be experienced for a day or two in respective season.

The city periphery falls in the North Konkan region. The major part of the land was marshy and consisted of saltpans. The salt produced here used to be supplied not only to several parts of the country but to the world over adding taste to their daily bread.

The area being a major salt depot (Agar), Mahatma Gandhi visited Alibag to chalk down the plan of salt agitation before he started it from Dandi on 12th March 1930. In the first week of April, Aagri brethrens at Ghansoli in Thane district followed the suite.[8] Sardar Vallabhbhai Patel too had visited Sasavane village near Alibag in Raigad district.

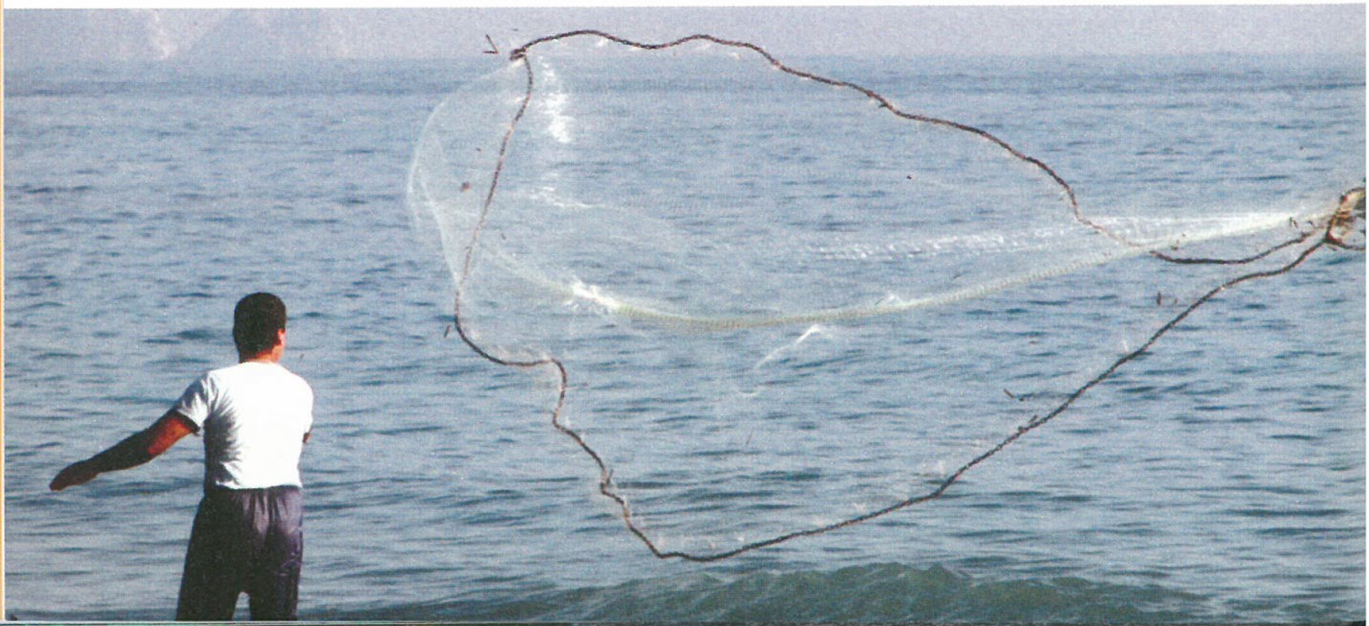
The land was used to produce paddy during rainy season. At some places, mango and coconut orchards and limited vegetable cultivation was found.

Those with irrigation facility used to grow legumes like 'tur' and 'beans'. With urbanisation however, all agriculture activities in Navi Mumbai have almost ceased to exist, except in the Easternmost part.

Fishing was a major profession of the people living in this coastal area. Fish, crabs and prawns were found in the creek, though the quantity was not enough to be supplied to neighbouring cities. However, local fishermen would sale surplus fish from domestic consumption in Thane and Belapur markets. With the advent of industries in the region and with consequent deterioration of water quality, these markets were lost.

The region is famous for its golden orange lotus. The rare herbaceous genus is on extinction now, for the marshy land on which it is grown has been weeded out in the past over four decades.[9] Keeping in mind the rich treasure of flora and fauna the planners set the goad preserve the enrich it. In the Development Plan 45% land has been kept for the purpose of open to sky activites such as playgrounds, gardens, nurseries etc. Different species of plants, insects, invertebrates, fishes, amphibians, reptiles, birds and mammals' are found here.

The major works taken in 1971 were 854 houses for Thane-Belapur industrial workers along with 52 shops. To cater to the housing needs of the industrial workers, CIDCO took up a housing project on priority, among other infrastructure works. Social infrastructure like schools, community centres, dispensaries were planned and developed gradually. It was initially planned for the population of 50,000 that would grow to 1,00,000 eventually.



FISHING: Amidst the co-existence of rural and urban culture fishing still remains main traditional business for the sons of the soil that has been passed on from generation to generation.

Belapur was the second node to be taken up for the development that started with Panvel Creek Bridge. The main aim of the bridge was to reduce the distance between Bombay and New Bombay. This node was conceived as the Central Business District (CBD) of the city from the very beginning. Development of the node in this direction started later. In 1972, construction of building for Konkan Region Commissionarate offices started in Belapur.[10] It was the first landmark building in the area and since then it is recognised as Konkan Bhavan.

In 1972, local people voluntarily surrendered 511 hectares of land responding to the appeal in the acquisition notification to get better deal of compensation, while government acquired 131 hectares. In the same year, 1,582 hectares of land was transferred to CIDCO.

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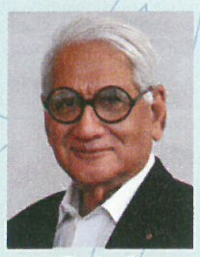
LOTUS FARMING: The region is famous for its rare herbaceous genus of golden orange lotus, now on extinction, was found here and the land was identified by the flower in olden days.

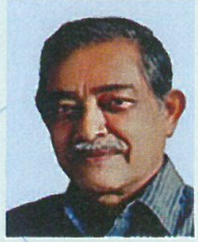
Apollo
अपोलो

The Great Eight

Mr. J. B. D'souza



Mr. Charles Correa



Mr. Shirish Patel

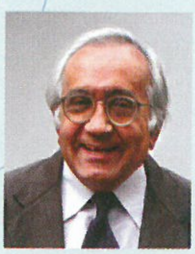
Dr. Madhav Sadashiv Gore

Mr. J. B. D'souza, the first Managing Director of CIDCO. A senior IAS officer was BEST General Manager during 1966-69, Municipal Commissioner between 1969 and 1970. In his long and illustrious career as bureaucrat, Mr. D'Souza later served as the Chief Secretary of Maharashtra between 1976 and 1977.

Mr. Shirish Patel, a civil engineer who turned his interests towards urban planning, and one of the three authors who suggested the idea of Navi Mumbai, (he) was CIDCO's first technical employee and led the work of planning, design and execution as the Director of Planning and Works.

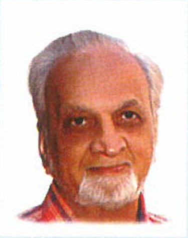
Mr. Charles Correa, was the second of the three authors who suggested the idea of Navi Mumbai, he was the Chief Architect between 1970 and 1975. During that period, he was honoured with Padma Shri for his contribution in post-Independence Indian modern architecture.

Dr. Kirit Parikh, the Operations Research specialist on the Planning Team, was then founder director of Programme Analysis Group (PAG) at the Department of Atomic Energy, Bombay; later he became Member (Energy, Water and Perspective Planning) of the national Planning Commission. He was awarded Padma Bhushan in 2009.Presently he is the Chairman of


Dr. Kirit Parikh

Dr. Phiroze Medhora,

Mr. K. P. Battiwala


Vijay Dhondopant Tendulkar

Integrated Research for Action & Development (IRADe) instrumental in Energy Research.

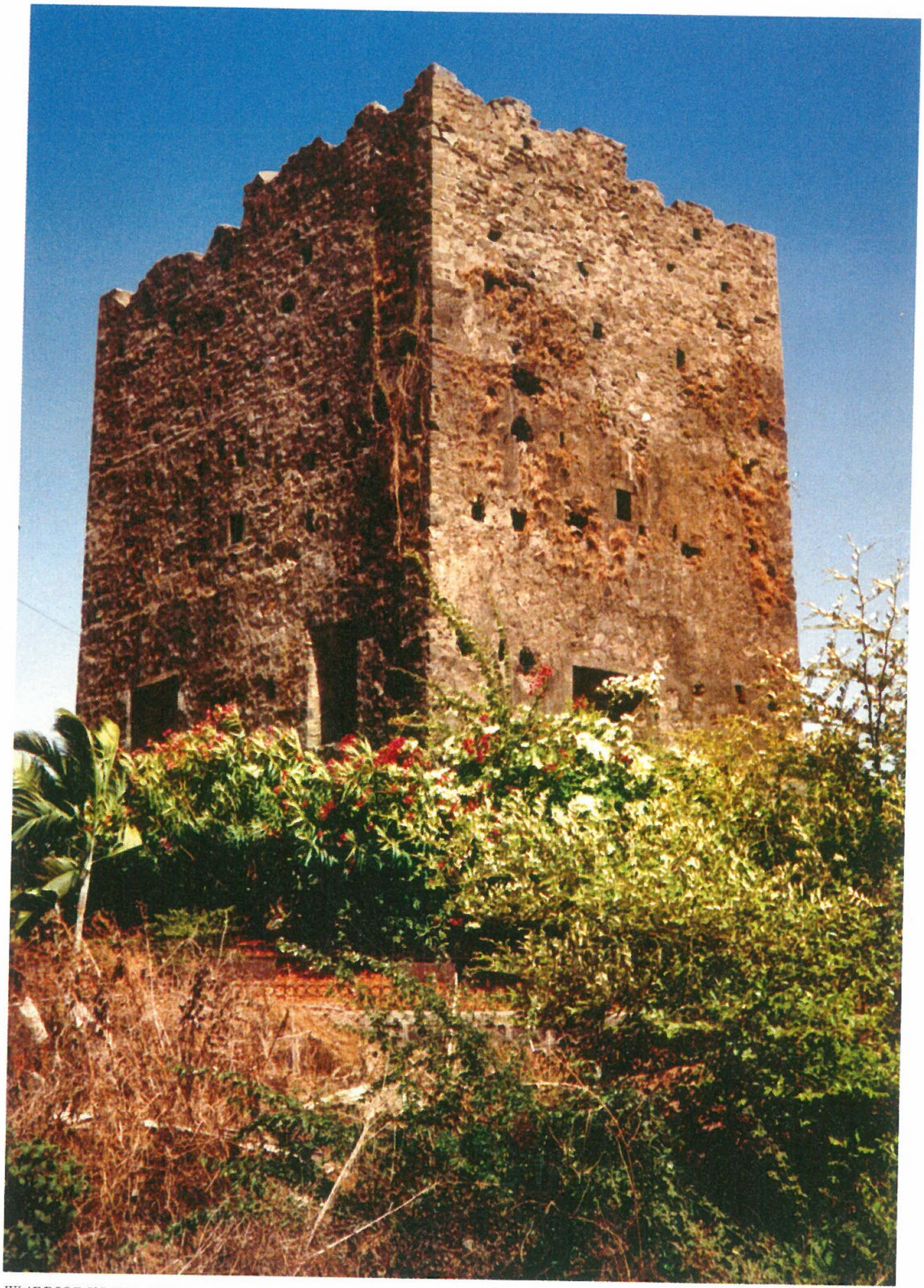
Dr. Madhav Sadashiv Gore (1921–2010), social scientist, educationist, writer and scholar; besides serving CIDCO he was also the vice-chancellor of Mumbai University and the Director of Tata Institute of Social Sciences (TISS). He was bestowed with Padma Bhushan, in 1975, for his contributions to social sciences.

Dr. Phiroze Medhora, was progressively in senior positions at the Industrial Credit and Investment Corporation of India (ICICI) during his association with CIDCO. In 1976 he joined the World Bank and retired in 1988 as head of the economics department of the Bank's International Finance Corporation (IFC).

Vijay Dhondopant Tendulkar (1928-2008) well-known Marathi playwright, screenplay was also revered as a social thinker. He wrote screenplays for some critically-acclaimed Hindi movies of the Art Film era. He was awarded the Padma Bhushan award in 1984.

Mr. K. P. Battiwala (1920-2008), while he was with CIDCO he worked with TATAs till 1980 with TATA Power and after the retirement with TATA Power as well as TATA Consultancy Services (TCS) concurrently as Senior Consultant.

TRANSFORMATION IN PROGRESS : The large piece of land getting ready for physical infrastructure.



WARRIORS' LEGACY : Remains of an old fort in Belapur stands as mute testimony of battle to protect the territory of then rulers.

CHAPTER
III

UNDERSTANDING GROUND REALITIES
(1973 to 1975)

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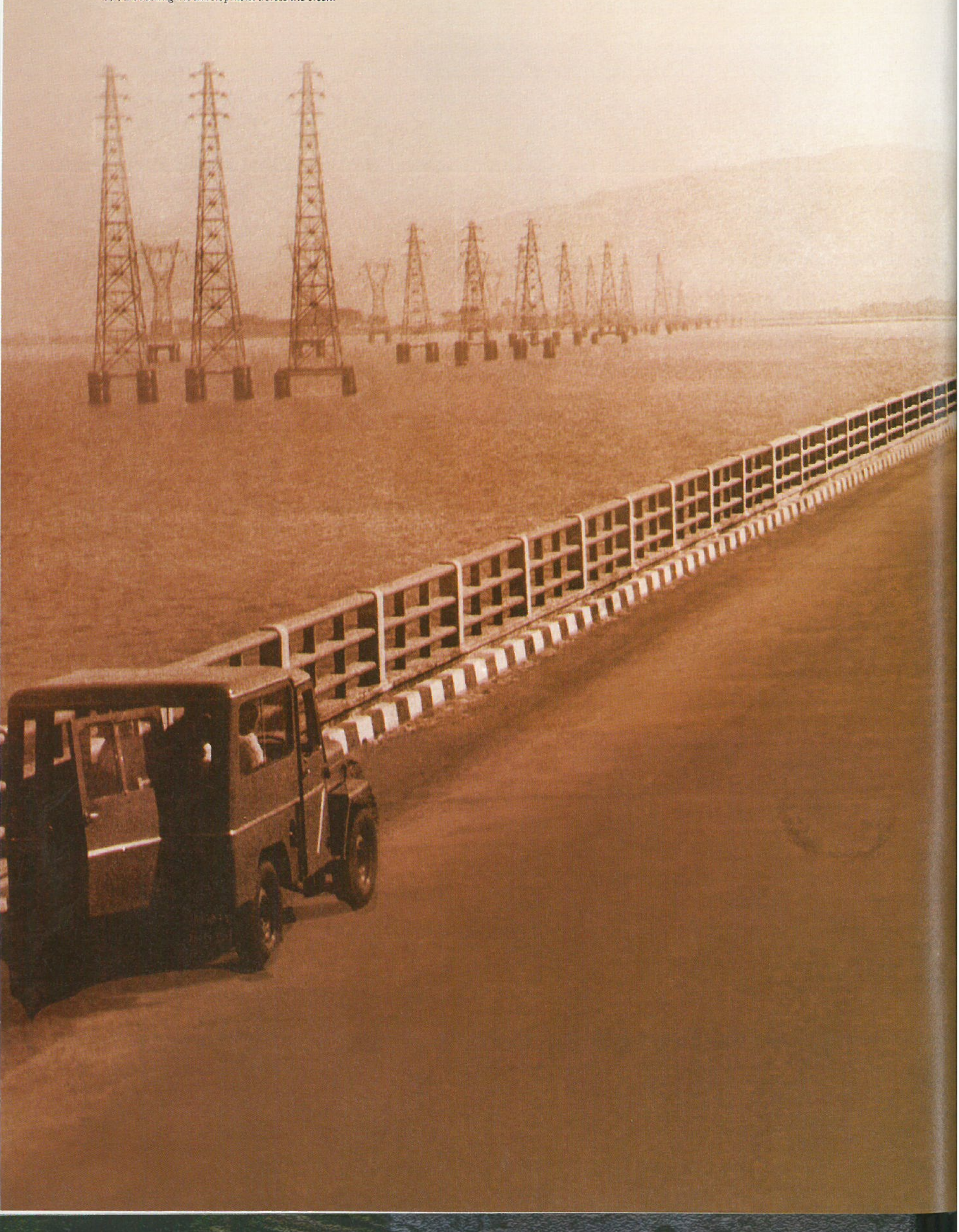
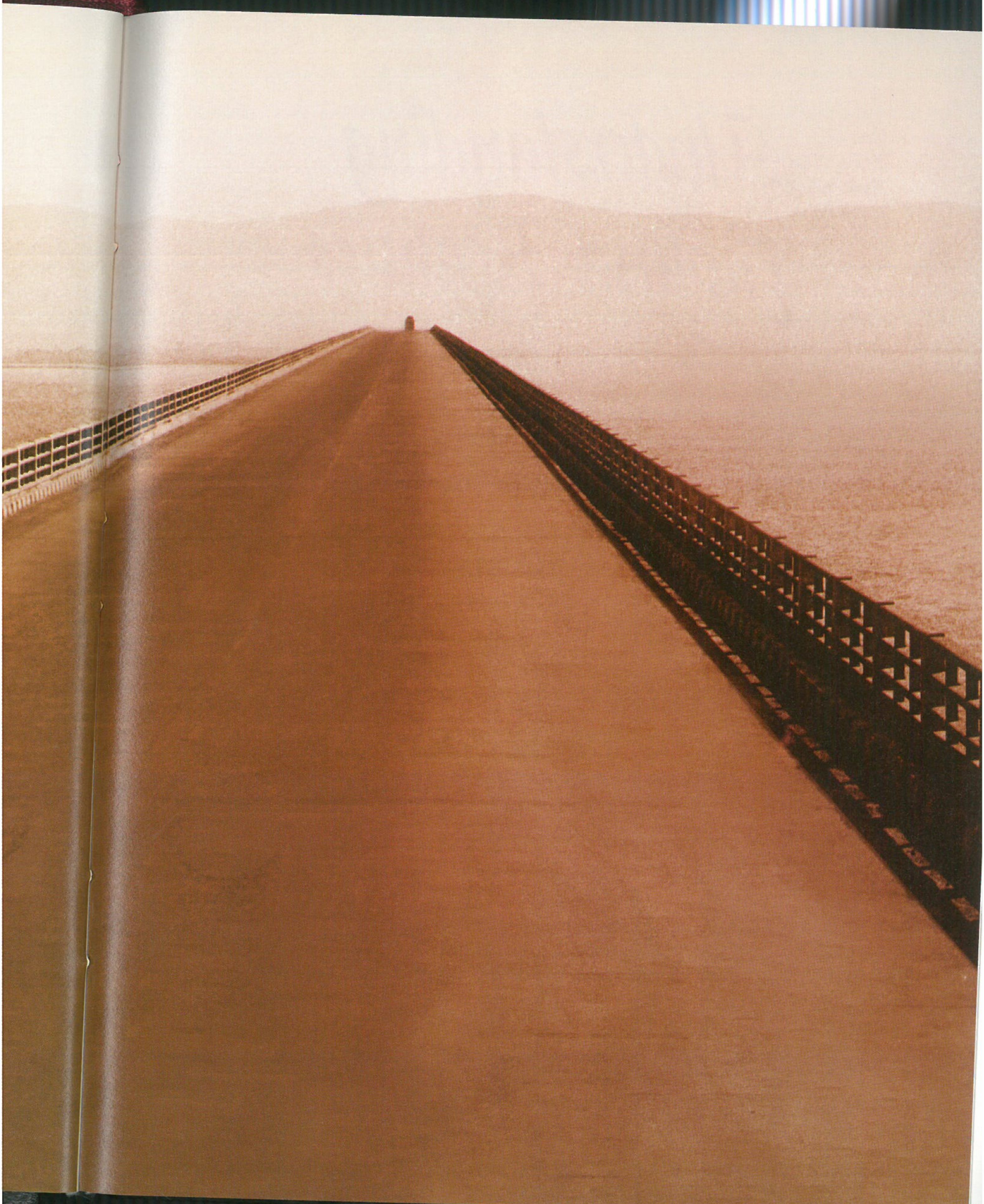
THE GATE-WAY TO NEW CITY : *Thane Creek Bridge connecting Mankhurd and Vashi, constructed by PWD, was opened for traffic in 1972 boosting the development across the creek.*





Understanding Ground Realities

~1973-1975~

Without culture, and the relative freedom
it implies, society, even when perfect,
is but a jungle. This is why any authentic creation
is a gift to the future.
-Albert Camus

CLUSTER ALFA: The site of CIDCO's first office in Navi Mumbai, Vashi was then known as Cluster Alfa.

INTEGRATED APPROACH

The very nature of CIDCO as the multi-disciplinary organisation could be attributed to the integrated approach towards planning and development of Navi Mumbai. This helped planners and engineers understand the ground realities more comprehensively. Even as the Development Plan for the proposed city was being drafted, CIDCO planners and designers initiated development in the Early Development Area (EDA).

In 1973, a team of planners and architects along with design engineers, economists were sent to the site office in Vashi – Cluster Alfa, as it was called then which later became Sector-1 of Vashi node. The building was a 'Community Centre' designed as a part of Sector-1 development. The Community Centre was the first building constructed by CIDCO to serve as a temporary site office. After 2 years, the office was shifted to the adjoining building, built as a cement godown.

At the conceptual level of development, the 344-sq. km. area was divided into North from Vashi to Belapur in the Thane District and South from Belapur onwards till Panvel from the Raigad District. Concurrent to the planning and development of EDA, the work on the Draft Development Plan (DDP) statutory obligations under the MR & TP Act 1966 was being pursued.

Three teams were set up on planning and architecture works. Mr. Suresh Gogte was appointed as the Town Planning Officer (TPO) of CIDCO for the preparation of Development Plan (DP) including the Development Control Regulations (DCR) for New Bombay. Mr. Correa, Mr. Thackeray and Mr. Satish Bhide looked after the architectural design and planning of EDA; Mr. Gogte, Mr. S. P. Pendharkar and Mr. Sule looked after the planning of the North area as well and Mr. Parab, Mr. Arun Mhaisalkar headed Southern part of the city. Mr. Phatak, Mr. Kopardekar and Mr. A. B. Sapre teamed for the Development Plan.

THE EDA PLAN

Development across the creek got a boost with the Thane Creek Bridge connecting Mankhurd and Vashi, constructed by PWD, getting open for traffic in 1972. Vashi was selected as the node for early development. It was a marshy land, thus was technically more challenging and more expensive to be developed. The site to start development was judiciously selected after careful assessment of various criteria like immediate availability of land, resistance from locals, accessibility and also connectivity to Bombay, Panvel and Thane, cost of development etc.

About 50-hectare land abutting the newly opened Sion-Panvel highway towards it's North side was selected on two major counts, firstly proximity to

Thane-Belapur Industrial belt with potential for housing requirement and secondly proximity to mainland for transport accessibility from Mumbai, Thane and Panvel. It was a marshy piece of land owned by the State Government, free from resistance of PAPs.

Initially Vashi consisted of 16 sectors. Later additional areas were included making it to 30 plus sectors. The Sectors 1 to 8 comprised the EDA. These sectors were purely residential and adjacent to District Business Centre (DCB) in the node. Each sector was of the size of approximately 250 X 250 mts. The city roads ran along the Northern periphery of EDA without crossing through any residential area.

The early development reflected that the focus of CIDCO was not just on developing non-living infrastructure, but to create all tangible and permanent assets that would have utility and usefulness for the life that was to grow. The stock of houses for different socio-economic strata was supported by social infrastructure like hospital, school, daily market, community centres, parks, and playgrounds which promoted commercial activities and made the city sustainable.

Planners and engineers took conscious efforts to develop social infrastructure in every node first. Everything came up first in Vashi Sector 1. CIDCO even constructed school and also run it even as that was not the mandate to develop and plan the city. Shops were reserved and sold for the sole purpose of flour mill in every sector. The shops were sold to PAPs.

People who prefer to relocate to a new city think of daily necessities and a better future of the young generation. Roads, bridges, drainage and sewerage system, drinking water system and street lights, no doubt are important, but a common man's priority is for the daily bread and shelter.

The EDA plan was a unique design in many ways, recollects Mr. Anil Sule, Senior Urban Planner associated with the planning, designing and execution of EDA. It was based on the famous concept of 'Neighbourhood unit'. The EDA was designed on the grid iron pattern of road network system. The major city roads are segregated from the neighbourhood units. The family unit, especially the budding generation, was the main focus of all activities with thrust on safety and comfort of the family.

Large open space was located at the centre of every residential unit. This was reserved for large playgrounds, children's park, sports association building with facilities like swimming pool, badminton, tennis and other indoor games. Apart from these activities, the open space also included playfields for two schools. This central open space was connected to each sector by a green spine facilitating people reach any sector with minimum sector crossing by roads. This pedestrian concept (walkable distance) was implemented for the convenience of the citizens.

In the EDA, sector level shopping was provided perpendicular to the road surrounding the sector. A bus stop was located on this road opposite to the shopping centre. The sectoral open spaces started from this point. The shopping was located on either side of the spinal green open space. These green spines reached various housing clusters. The major social facilities like schools, daily

ROW HOUSES: Many innovative designs have been devised and adopted by CIDCO the concept of 'row house' type design was promoted for the first time and was planned in Vashi sectors 6 and 7.

shopping units, community centres, milk booths and children parks are located on these green spines with shading trees. CIDCO had appointed a specialist for maintenance of plants. The greenery that is seen in Sector 1 to 5 can be attributed to him.

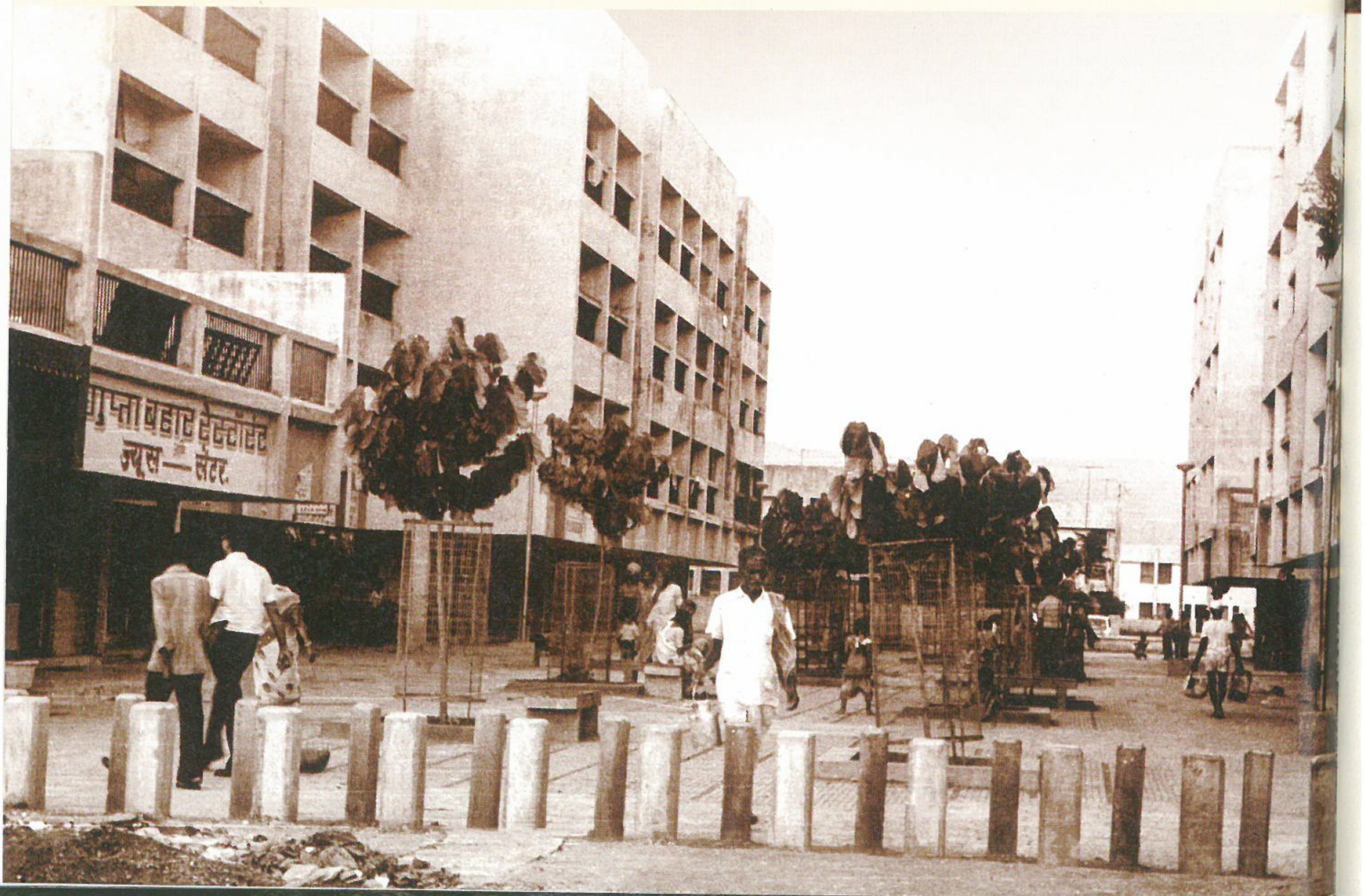
Social sciences team led by Mr. Gore as an advisor and Mrs. Pravina Mehta, an integral part of CIDCO's multi-disciplinary character, used to provide inputs on the social facilities and housing needs of every strata of the society considering the projected population. The major social facilities like schools, daily shopping units, community centres, milk booths and children parks are located on these green spines.

The 45-mt. wide city road which started from the Sector 7 of EDA ran parallel to Sion-Panvel highway and was connected to Thane-Belapur Road, where all the industries were located. This road was also important as it connected the Wholesale Agricultural Markets on its route. This road accommodated a dedicated bus route, a cycle track, a wide footpath and the city level area drains.

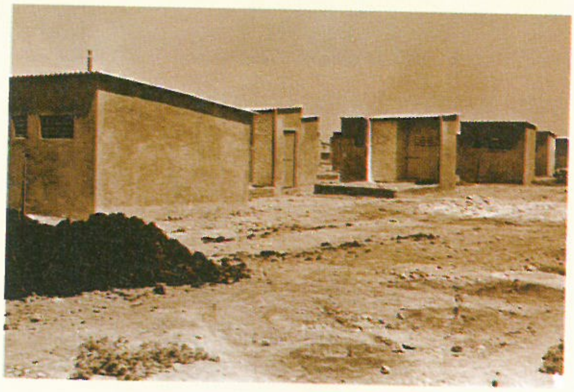
The house designs were space-effective with minimum family requirements. Many innovative designs were devised and adopted in EDA. The concept of 'row house' type design was promoted for the first time and was planned in Sectors 6 and 7. The row houses were designed in various sizes making them affordable and hence became very popular soon. It offered a small plot and a built G+1 house and open spaces in front and rear. The soil conditions of the marshy land and cost considerations restricted the buildings to a maximum of G+3 or 4. Height of rooms was reduced to average 8'-0" than normally accepted norm of about 10'-0". This ensured less climbing height for residents on top floor.

Shop-cum-residences structure with shops on ground floor and residential tenements on top floor facilitated to avoid the deserted look of the

SHOPPING-CUM-RESIDENCE: The structure with shops on ground floor and residential tenements on top floor facilitated to avoid the deserted look of the shopping areas after the office hours making it lively in the night.



Construction site of row-hosing scheme.



Construction at the site of Site &Service type housing, the urban design depicted a typical rural setting with internal open courtyard around houses that deviated from Mumbai's prototype chawl system.

shopping areas after the office hours making it lively in the night, unlike the South Mumbai office area. The shopping units were placed perpendicular to the main road so as to avoid spill over of activities and crowd on the roads. This type of design earned good public response then and was replicated in other nodes later.

CIDCO promoted and implemented affordable housing right at this initial stage through Sites and Services (S & S) schemes. The scheme basically consisted of three alternative designs such as: 1) Small plot of land with a toilet block, 2) Small plot of land with a toilet block and plinth and 3) A completely constructed unit. The S & S scheme was well received by low-income group.

The S & S schemes set the trend in the urban planning. This urban design depicted a typical rural setting with internal open courtyard around which a group of housing was organised. It also got deviated from the chawl system prevalent till then in Mumbai. The chawls had common toilets on every floor of the ground plus structures.

Whereas S & S schemes provided individual toilets to each house and a 24 hours water supply with proper drainage arrangement for each house, thus individual buildings in EDA did not have overhead tanks. This scheme was executed in Sector No. 2 of Vashi node. As CIDCO evolved and devised housing designs, it started naming it alphabetically according to size from small to big roughly. The popular 'E' type designs accommodated low, middle and high income group families in one building. This design offered large open terraces on 2nd, 3rd & 4th floors.

Aesthetics in design was yet another objective of the designers in CIDCO, be it the building designs, infrastructure designs or a pleasant single shaft overhead water tank design deviating from the multi-columned structures. The detailing and completeness of every small aspect of designing were aptly looked after and executed. The most commonly used practices were replaced by new systems like the covered drains, footpaths with curb stones, proper road curves, road and other signage systems, providing underground electric cabling systems, etc. In many house designs, the concept of refuse chute for collection of garbage was introduced.

DRAFT DEVELOPMENT PLAN

The Draft Development Plan called as the Blue Book was published on 5th October 1971.[1] Urban Development Minister of Maharashtra, Dr. Rafiq Zakaria, CIDCO Chairman Mr. Wagle, MD Mr. D'souza and Mr. Patell presented the plan to Mrs. Gandhi on 20th December 1973 with a view to apprising of the major new town development in Maharashtra, this was incidentaly the first indigenous initiatie in Independent India; Chandigarh was

GOLDEN MOMENT: *The Prime Minister Mrs. Indira Gandhi was appraised of this major urban development project initiated in Maharashtra. Urban Development Minister Dr. Rafiq Zakira, along with the first MD J. B. D'souza and Mr. Shirish Patel is presenting the Draft Development Plan of Navi Mumbai.*

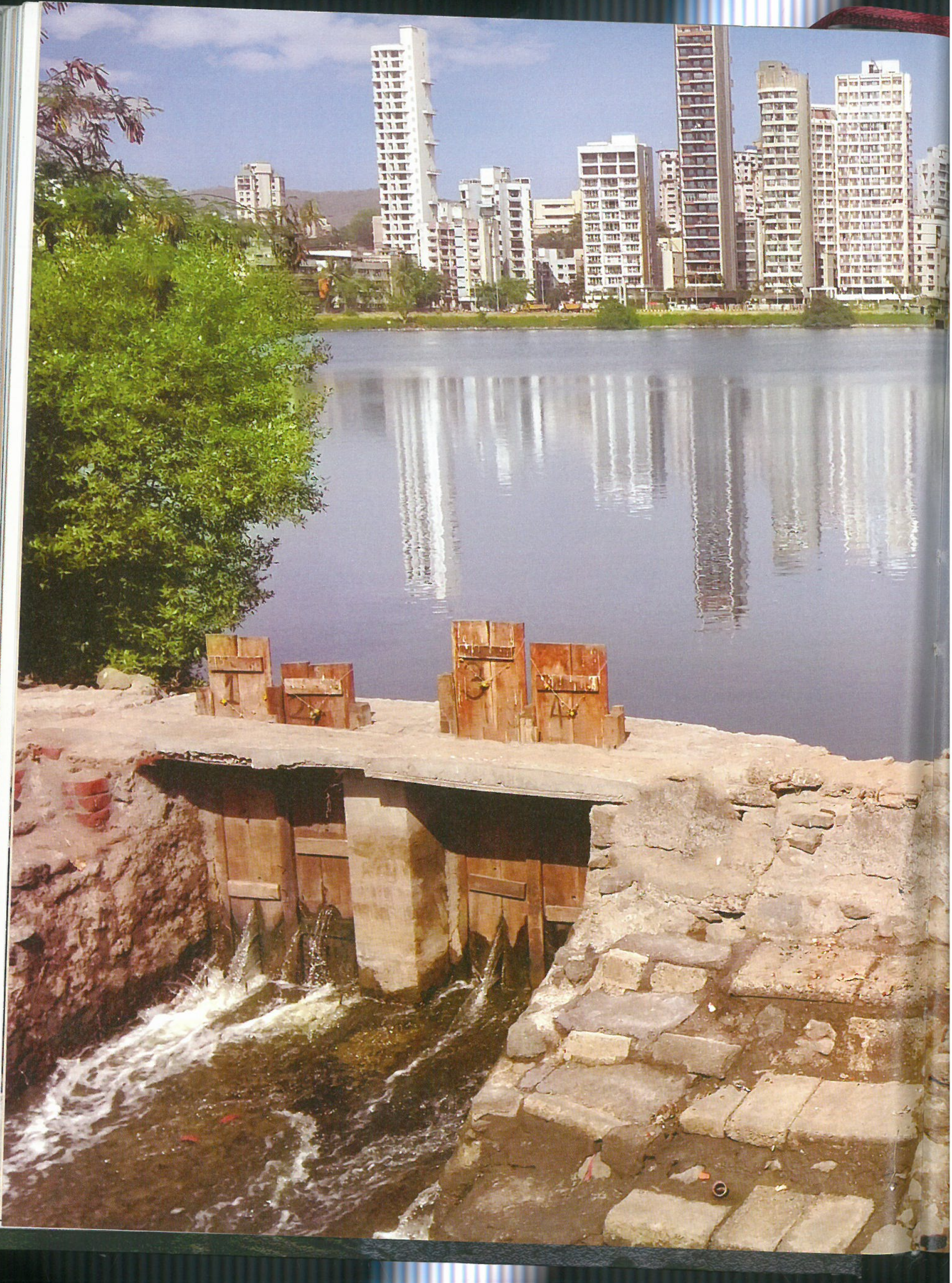
planned and developed by foreigner planners. It took CIDCO 2 years to complete the Blue Book,[2] a vision document for the proposed new city then mentioned as New Bombay (now Navi Mumbai), in compliance with the Maharashtra Regional and Town Planning Act (1966) guidelines.

Navi Mumbai is planned for a population of 2 million by 2000 with a potential to accommodate another 1.5 to 2 million. It is estimated that the ultimate population may be of 3 to 4 million. The DDP envisaged polycentric pattern of planning and development of Navi Mumbai initially for 20 nodes, i.e. townships.[3] These nodes would connect each other around the Central Business District (CBD) of Navi Mumbai to be developed in Belapur node. Planned as a powerful counter-magnet to the South Mumbai's work centre (CBD) of Nariman Point is spread over 575 hectares, 20 times larger than Mumbai's CBD. All major Central and State Government offices, banks and other commercial establishments were planned here. The CBD would be connected with District Business Centres (DBCs) in 5 nodes paving the way for commercial activities.

Forming a ring around the picturesque Manasarovar Lake, the CBD spreads along the periphery of five nodes. The lake would be developed to offer a range of water sports. The CBD would have its own circular railway and inner as well as outer ring roads. Four radial roads will connect it to Mumbai, Pune and other parts of the mainland. Located in the very heart of the city, it is placed within easy commuting distance from all nodes strung along the Mass Rapid Transport Corridors designed to minimise travel time and distance between nodes and neighbouring cities.

The major wholesale markets and industrial belts are distributed in outer areas. Intervening nodes are for predominantly residential settlements. Each node is self-sufficient with educational health, social, religious, cultural, sports and recreational facilities. The pattern ensured a balanced land and even distribution of residential areas, commercial areas, wholesale markets, non-polluting industry and population density.

The plan provided for an integrated transportation system consisting of roads, railways, waterways and airways. All nodes are connected by a mass transportation system in the form of the commuters' railway, which is economical and cost-effective. City level high capacity expressways with controlled access are planned and are being constructed at the periphery of the development nodes, to facilitate uninterrupted flow on inter-city and intra-city vehicular traffic, considering the overall requirement of Navi Mumbai residents as well as industrial and business people. Feeder road system has also been provided for safe and economical internal movement of node traffic.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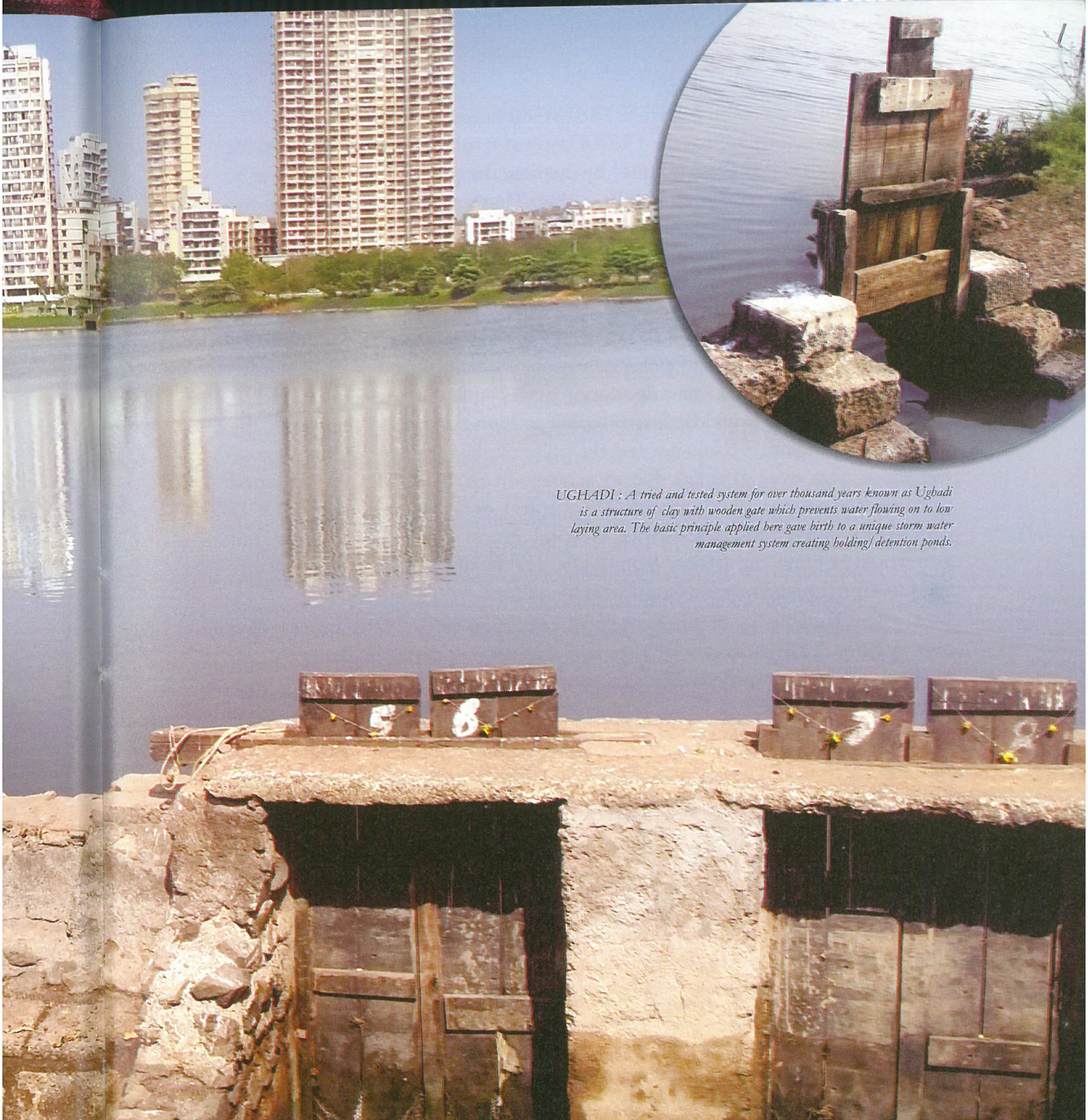


UGHADI : *A tried and tested system for over thousand years known as Ughadi is a structure of clay with wooden gate which prevents water flowing on to low laying area. The basic principle applied here gave birth to a unique storm water management system creating holding/ detention ponds.*

The DDP was submitted to the State Government on 10th October 1975 and was subsequently approved.[4] CIDCO, still as a subsidiary, took the grip on the new city project of New Bombay by the time. In this year Mr. Madhukar Y. Thackeray, a distant relative of late Balasaheb Thackeray, was appointed as the first Chief Architect and Planner (CAP) of CIDCO.

UNIQUE STORMWATER SYSTEM

Having assessed the geology and climatic conditions, planners and engineers took up the task. Vashi was selected as the first node for development. It was a marshy land, thus was technically more challenging and more expensive to be developed. The site to start development was judiciously selected in Turbhe village so that there would be less flooding in high-tide period. However, the planners and engineers could not feel the pulse of the local people, the sons of soil those who were affected due to acquisition of land. The PAPs started agitating against the development. The protest grew stronger and CIDCO officials succumbed to the resistance.[5] Second option was the government land as it would not invite resistance from PAPs. The starting point for the new city was just after the land's end of Mumbai at Mankhurd.

The land had a number of small and large creeks with surrounding marshy lands. The percentage of firm land was very moderate. A larger part of the land had to be reclaimed whereas some part was on firm land of Vashi island. The reclamation posed different problems and required different construction techniques in engineering designs. The team of site engineers was already working on the site towards reclamation and infrastructure works.

BLESSINGS IN DISGUISE

Navi Mumbai planners started searching the solution to storm water flooding. It was a challenge for city planners to provide an efficient storm water disposal system to avoid flooding.

The problem of storm water disposal in Navi Mumbai is hydrologically more critical than Mumbai. Mumbai mostly drains sky catchment whereas in Navi Mumbai, storm water coming from surrounding hill ranges is required to be tackled in addition to the sky catchment. The sky catchment receives about 700 million cubic metres (mcm) of water annually, mostly during four months of monsoon. In addition, about 600 mcm water from outside Navi Mumbai flows through Navi Mumbai before being discharged into the creek.

The maximum intensity of rainfall is 23 cm per hour and 45 per 24 hours as against 250 cm per annum. The local storm water catchment is divided into two types: one hilly and the other plain. Storm water flows with high velocity down the hill slopes. The high velocity results in surging of water due to conversion of dynamic into potential energy.

This phenomenon becomes more dominant at the time of high tide in the creek which retards velocity of water flow further which results in flooding of plain areas at the foothills. High tide in Mumbai is up to 5 mt., in Navi Mumbai it is up to 10 mt. making low-lying area prone to submergence during monsoon. Navi Mumbai's 30% land is below sea level. Planners and engineers had realised how crucial the issue was. Safety of the city was on tenterhooks due to this single aspect of storm-water management.

Conventional method used as a solution involved raising the low-lying lands by earth filling. Extent of fill is decided by keeping high water level of the storm water system just above the high tide level and the channels are laid to slopes to attain self-cleansing velocity.

Holland, yet another island nation, was considered for the case study. It revealed that tackling tidal flooding in Navi Mumbai was more difficult as the rainfall here is 100 times greater than that of Holland. Implementing and maintaining the Dutch solution would be much costlier. Relying on power supply to operate the system was also found impracticable. The Dutch Method involves the construction of bunds (dykes) alongside the proposed developing area, rising above high tide level to block entry of tide water onto the area which is given adequate slopes for surface run-off and given a good soil topping to provide comfortable working surface.

Since level of ground remains lower than the high tide level, the storm run-off cannot flow into the sea by gravity, except when tide level is lower than water level in the drainage system of the area. This makes it necessary to either pump out the water or provide sufficient holding capacity to store the storm water during higher tide levels and discharge it as tide recedes. Such reclaimed piece of land is called a "Polder" and method of reclamation is known as Polder Method or Dutch Method.

SOLUTION SIGHTED

It was 1972, the second year of development. An enthusiastic engineer, a new blood in CIDCO, accompanied by a local guide who was to show him the route through marshy land, for carrying survey of the area in Belapur node found that in evening time, high-tide phase was nearing and the guide cautioned the engineer to move out of the site, he did not heed to the guide's advice, and to his dismay in a few minutes they were cordoned off by water. They somehow managed to reach a village. The tired and hungry engineer feasted on the spicy Aagri cuisine with rice-bread that night, followed by the nightmare.[6] Hardly he

The Vision

'CREATING SAFE, ENVIRONMENT-FRIENDLY AND SUSTAINABLE CITY WITH ATMOSPHERE CONDUCIVE FOR FULLER AND RICHER LIFE THAT WOULD BE DEVOID OF SOCIO-ECONOMIC DISPARITIES'.

would have realised then that this ordeal would turn out to be the blessings in disguise.

Even as their goals were set, hardly had they realised that their endeavour would create history and not just a city. They went to the roots of the problem to find out, where exactly it happens? When it happens? And what is the intensity?

Navi Mumbai planners thoroughly studied Mumbai's monsoon menace. The problem is related with the evolution of the city. As the Seven Island City grew into a global commercial centre, it became much sought after place for the people from every stratum. The population rose unexpectedly and became uncontrollable.

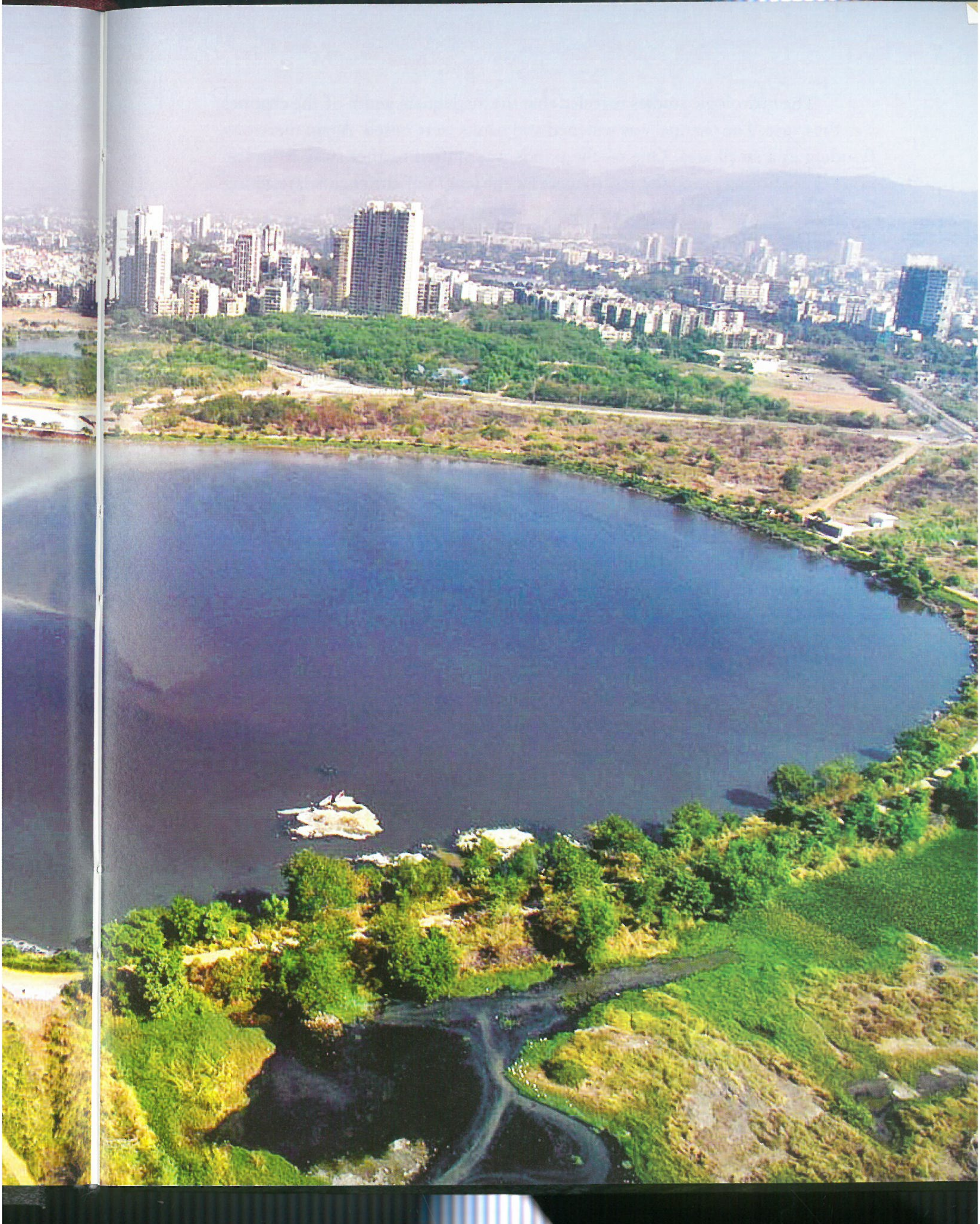
As it is said that, 'where there is a problem there is a solution'; the solution was found in the adjoining area. A local guide unknowingly and unintentionally showed the way. It is the system tried and tested for over thousand years known as "Ughadi". It is a structure of clay with wooden gate. These structures are still seen alongside marshy areas of creek. It helps prevent the tidal water from entering into the bunded or dyke area – earthen embankment.

The gate is fitted with timber frame which is embedded in stone masonry. The foundation of the structure is shallow and is laid on clay itself. It is fitted with wooden shutters. The shutters are closed to stop ingress of high tide and opened to discharge rainwater collected inside area, at the ebb tide. The tide ingress is prevented traditionally by Ughadi and earthen dyke.

Site studies and information derived from local people helped evolve a very peculiar system for storm water disposal. The system that would keep ecological balance intact, retain hydrological character of catchments, maintain relation between precipitation hydrograph and discharge hydrograph; avoid siltation of the creek outfall keeping tidal flow character, keep evapo-transpiration character of the region undisturbed; augment underground water system retaining hydro-geo-morphological character and balanced flood level.

The planner put the system to test for their satisfaction. A pond was provided at the Southern outskirts of Vashi node. The node and pond were connected by making use of existing arm of creeklet. This worked well. There was no problem. The dream of flood-free Vashi had come true, it seemed. The first year monsoons passed with no hassles, the second year too passed sans contingency. Then came the D-Day! Monsoon arrived to dampen all the spirits. There was flooding in the entire node. The investigations revealed that the breach of dyke due to swelling of water during high tide coupled with heavy rains in the bypass channel at outskirts caused the damage.

AESTHETIC PLANNING: One of the 40 water bodies that form unique storm water management system that saves Navi Mumbai from monsoon menace. Known as Holding Pond/Detentions Pond the water bodies add aesthetics to the city.



The hydrologic studies revealed that the inadequate width of the channel was the cause. The channel was widened and banks were raised. Again there was flooding in a small area. One of the ponds was shifted further away from the node. The shifting paved the way to increase the length of the channel, resulting in swelling of water in channel due to hydraulic gradient requirement.

Thus polder within polder was created interconnecting North-South and East-West channels to enable diversion of water in one channel from the other in case of emergency, like the principles of grid system in the transportation engineering. Blessings had thus come down in disguise!

A unique stormwater management system was evolved with the help of Holding Ponds and Detentions Ponds. The planners and engineers created these artificial water bodies in almost every node to hold storm water. This showed positive results after over three decades – in the 2005 cloudburst, even when and 720-km coastline of Konkan, including Mumbai witnessed the worst-ever floods, only Navi Mumbai was least affected.

This led to the creation of a peculiar urban phenomenon specific to Konkan region. CIDCO has created 40 water bodies known as detention ponds (38) and holding ponds (02).* The ponds, encircled with trees, also serve as a major part of storm water management and prevent water logging in low-lying areas during monsoon. The ponds encompass a total area of about 619.57 Ha.

In 1973, farmers surrendered 519 hectares voluntarily and 171 hectares were acquired legally.[7] In the same year, 2,316 hectares of land was transferred to CIDCO. In 1974, in all 442 hectares were acquired and 900 hectares of land was voluntarily surrendered.[8] The Government transferred 3,690 hectares to CIDCO by 1975.

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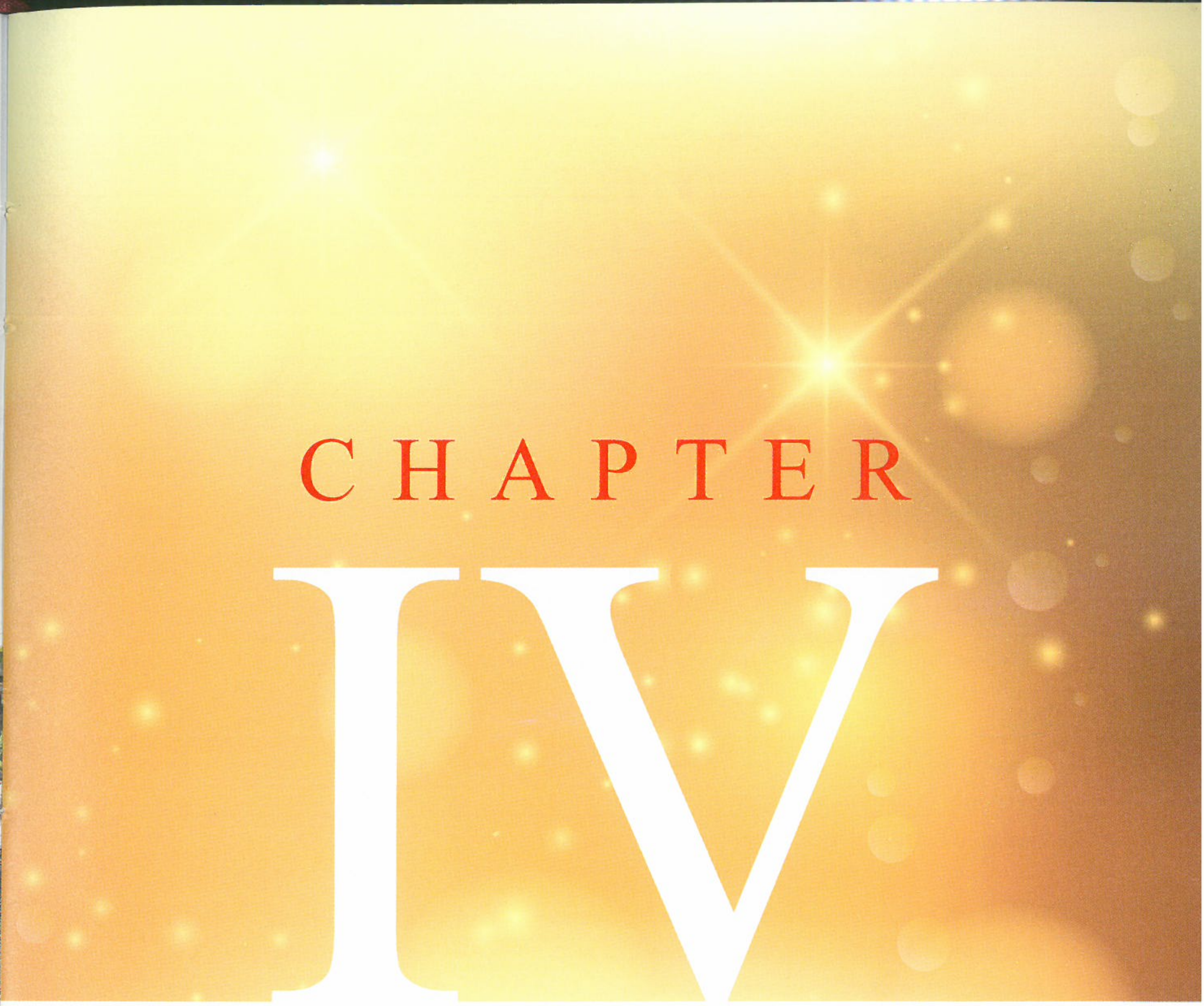
* See Appendix IV, page 271



CHAPTER IV

NEW IDENTITY
(1976 to 1979)

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New Identity

~1976-1979~

> *City planning finds its validation in the intuitive recognition that a burgeoning market society can not be trusted to produce spontaneously a habitable, sanitary, or even efficient city, much less a beautiful one.*
>
> *-Murray Bookchin*

HORIZON WIDENED

With a wide horizon open before it, CIDCO was all set to do the job entrusted to it. The Development Plan was ready and it also had sketched development control rules. It took five years for CIDCO to settle down as an organisation before it got its own identity on 30th March 1976 to become an independent entity fully owned by the Government of Maharashtra[1].

Even before CIDCO got onto its own, the government delegated it yet another responsibility as the Special Development Authority (SPA) for Bandra-Kurla area (later known as BKC) in February 1976. However, later the Maharashtra Metropolitan Region Development Authority (MMRDA) replaced CIDCO for the BKC[2]. The first Annual Report of the CIDCO, as an independent company showed deficits to the tune of ₹ 1,92,588.

CONNECTING CULTURES

The most noteworthy contribution of CIDCO in developing Navi Mumbai city is that of connecting two cultures. It was not just bridging the gap between two islands, but bringing together people, their lifestyles; merging the likes and dislikes, blending costumes, customs, cuisines and languages. Thane Creek Railway Bridge gave a boost to the growth of Navi Mumbai and to the expansion of Mumbai's housing market.

Sensing the need for Mass Rapid Transit System that would provide better and faster commuting between Navi Mumbai and Mumbai, CIDCO approached the Planning Commission and the Railway Ministry in 1978 for the extension of railway line from Mankhurd to Panvel via Vashi. The Railway Ministry submitted the Techno-economic Feasibility Report on Mankhurd-Panvel to the State Government in the same year. In March 1979, CIDCO allotted work for arterial goods rail to Indian Railway Corporation (IRCON).[3]

CIDCO, as the catalyst, set a new precedent for the first time in India after the Independence by developing the Mass Rapid Transportation in Navi Mumbai in cooperation with the Indian Railways. It was the tri-party accord signed to share the expenditure of constructing 160-kms West-East Corridor of Bandra-Kurla-Mankhurd-Belapur-Panvel. While CIDCO along with the State Government shared 67% cost, the Indian Railways' borne 33% share. Detailing, designing and construction were done by Railways.

The Indian Institute of Management of Bangalore completed the social cost-benefit analysis in 1980.[4] The cost estimated in 1978 for the Bandra-Kurla link was ₹ 51 crore, cost for Mankhurd-Belapur corridor as estimated in 1980 was ₹ 76 crore and the Belapur-Panvel link estimated cost in 1981 was ₹ 42 crore. Thane-Vashi corridor was also developed later on the same cost-sharing formula. All the 30 stations constructed on Vashi-Panvel and Vashi-Thane lines have double discharge platforms and aesthetic architecture.

The Panvel Creek Bridge was opened for public use four years after its completion on 21st February 1979. The development of New Panvel node on the West was taken up in the same year. In the month of March, development of Kalamboli, the fourth node was initiated with Steel market-cum-warehousing complex on 275 hectare.[5] Plots were allotted to the State Warehousing Corporation, State Marketing Federation, Fertilizer Corporation of India and Cotton Corporation of India in the same year.

PAP's mayhem erupted in 1976 for the first time. CIDCO had given the

BRIDGING THE BREACH: *Navi Mumbai's development on the South started with the Panvel Creek Bridge which got opened for public use on 21st February 1979 connecting Thane district with Raigad.*

land to Central Government's undertaking Oil and Natural Gas Corporation (ONGC) for its plant in Uran. The ONGC needed more land for the access road. This land acquisition process invited the trouble.

The Central Ministry of Ports cleared in 1979 BPT's project report for the Nhava-Sheva Port development and this later had far-reaching consequences on Navi Mumbai planning. On one hand, it compelled CIDCO to change the land use to cater to the needs of the port. On the other hand, the port and the ONGC projects triggered farmers' agitation.

The process of land acquisition and training of PAPs continued. Total 3,737 hectares (including the land in the government possession) were transferred to CIDCO. Till 1977, CIDCO trained 2,315 PAPs and absorbed 3,755. In all, 304.32 hectares of land was acquired by the government from farmers. The table below gives the details of the private land acquired by the State Government till 1977.

Year	Land (in ha)
1970-71	000.18
1971-72	134.53
1972-73	258.85
1973-74	689.83
1974-75	269.63
1975-76	438.39
1976-77	304.32

Source: Issues in Urban Development, a Case Study of Navi Mumbai, pg 299

RESERVE PRICE MECHANISM

By this time, CIDCO had devised a methodology for the Reserve Price and Base Price for the land at its disposal. This was for the purpose of recouping cost of development from the sale proceeds of land and constructed property, recalls Mr. Ardhendu Bhattacharya, former chief economist. Reserve Price of saleable land is derived by ascertaining the present worth of the future year-wise expenditure after considering the cost of raw land, cost of land development together with laying of entire range of physical and social infrastructure facilities, overheads, interest, etc.

Reserve Price is obtained by dividing the present value of total recoverable cost by balance saleable area. The price is calculated at per square metre. The Reserve Price is determined through this exercise every year. Once the Reserve Price of a node is determined, the Base Price of land for different uses of land and for different target group in each node and outside is fixed. The Base Price for open plots is further adjusted as per location advantage of the plot. Quite often, the Ready Reckoner Rates for select uses are also reckoned with.

The methodology also facilitated to determine the Land Price and Land Disposal Policy that specified the method of cross-subsidizing the use of land for various social facilities, public utilities, low income group, land for project-affected people by appropriately pricing the land for commercial, commercial-cum-residential use, higher income residential at market prices. By this method, the overall cost recovery is ensured and the project is able to break-even with comfortable project IRR upwards of 25 per cent.

ADDING VALUE TO LAND

It helped CIDCO make Navi Mumbai a self-financed city using the value-added land as a resource. CIDCO was to recover all costs of development through the disposal of land and perform its role without any budgetary support from government as envisaged in the DP. It was the RPM that ensured to get back the amount incurred on the infrastructure.

CIDCO recovered small surcharge from the more expensive housing, being used to subsidise the lower income construction. CIDCO charged 25 to 50 per cent of the Reserved Price for the housing for Economically Weaker Section/Lower Income Group and 10 to 50 per cent of Reserved Price for social infrastructures, including educational facilities. The subsidy given to these groups is recovered by changing Market Price for commercial and prices higher than Reserved Price for the Middle Income Group and Higher Income Group housing. CIDCO applied their principle of cross subsidy for S & S type of housing.

Land being the prime resource of development for financing, the multi-faceted development activities in Navi Mumbai pricing of land assumed a critical aspect for a smooth cash flow for the project and also to ensure a full cost recovery while developing a new urban habitat, Navi Mumbai. It wasn't possible to sell all the land at one go without required socio-physical development at the sector, node and city level. As this would take a long time and therefore fund requirements also spread over years.

According to the financial arrangements in the Draft Development Plan, all the development costs including the costs of providing improved urban and social amenities would be met by realising funds through the disposal of developed plots. Disposal would be by lease and not by sale since it was desired that all land in the project would always vest in the hands of CIDCO, but the lease amount would be realised by way of a premium paid by the end.

Therefore it was envisaged that from sale proceeds of land, houses, social and commercial premises, CIDCO would pay back the initial loans and gradually build a corpus to fund major city scale works such as development of water sources, including laying of pipeline, Mass Rapid Transit System in the form of commuter rail network both inter-city and intra-city, water transport system, major roads, bridges, flyovers, recreational areas and even developing power supply system.

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CHAPTER V

SHIFTING WHOLESALE MARKETS
(1980 to 1990)

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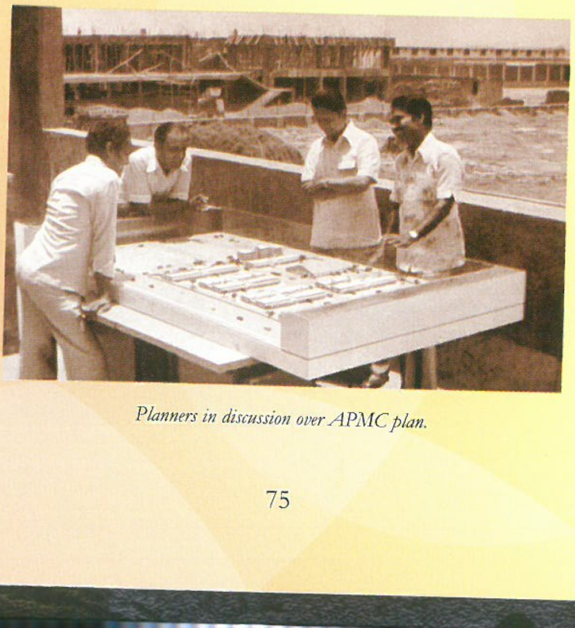
Shifting Wholesale Markets

~ 1980 - 1990 ~

Find patience or it will never find you.
-Mike Dolan

AGRICULTURE PRODUCE MARKETS

As an integral part of decongestion of Mumbai and consistent with the recommendations of the Regional Plan for the Bombay Metropolitan Region setup under the MR & TP Act 1966, CIDCO planned Agricultural Produce Market Complex (APMC) at Turbhe to shift the wholesale markets of agricultural and agricultural-processed commodities. The real cause of congestion in South Mumbai was the wholesale trade in various commodities. Discussions in MMRDA around 1976 had also corroborated this. Therefore it



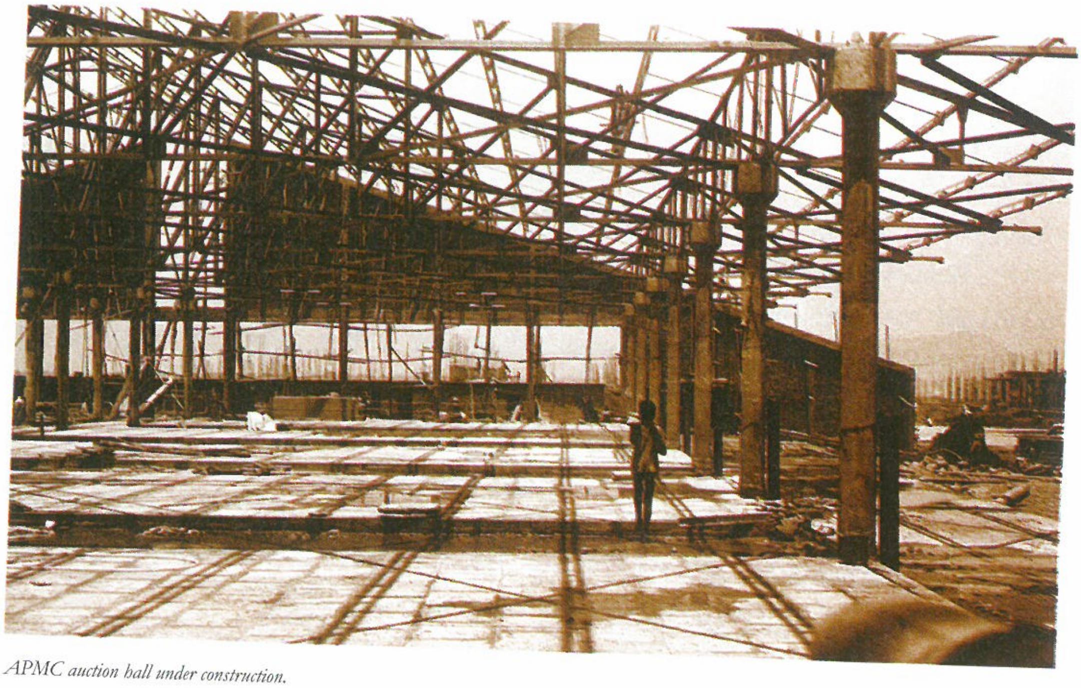
Planners in discussion over APMC plan.

was decided to concentrate on relocation of wholesale trade; first in agriculture produce and then in Iron and Steel. The APMC was planned with separate buildings for wholesale markets of onion and potato, processed agricultural produce, grains, fruits and vegetables. Shifting of markets provided the employment base for the future and started the ball rolling in that direction.

Relocating of Mumbai's wholesale markets to Navi Mumbai was planned in phased manner. In Phase I fruits and vegetables markets (February 1996), Onion and Potato wholesale market (February 1980), whereas in phase II Processed Agriculture Produce Market in Sugar, Gur (Jaggery), Condiments, Spices, Oils, Coconut, Dry Fruits, Flour, etc. (February 1991)and Grains Market in Grains, Rice, Oilseeds (May 1993) got ready. Construction in APMC for Banking Complex comprising 7 banks was taken up in 1990. Wholesale Steel Market, Stockyard and General Warehousing Complex was completed in 1985 and Iron and Steel Market Complex was inaugurated in 1989.

It started with the 238-shop-cum-godown for onion and potato wholesale market, construction for which began in February 1980 and was completed in the same year.[1] "It was not an easy task. It was like serving many masters at one time. Several stakeholders were involved in the project", recalls former Urban Planner and Architect Mr. Anil Sule, who played an instrumental role in the planning of APMC that fetched CIDCO the credit and honour of developing Asia's largest agriculture produce market. While on one hand traders opposed shifting of the market out of the fear of imposition of new taxes, on the other end Mathadi workers had opposed the project on the pretext of inconvenience in loading and unloading the gunny bags. Raised loading and unloading platforms were provided for the convenience of Mathadi and other related workers. The new design saved loading and unloading time and increased the volume of business to a large extent. Several rounds of discussions and deliberations were held with the traders and government officials. Finally no fresh or additional taxes were levied. Traders were convinced and they acquiesced.[2]

Even as it's difficult to please all people at all times, architects and planners did their best and offered extremely innovative design solutions for the APMC that pleased all the stakeholders like the Agriculture Produce Market Committee whom the land was allotted; the State Agriculture Federation, Maharashtra Agriculture and Food Processing Corporation (MAFCO) and traders' associations. "We analysed the character of these wholesale markets and constructed a model unit for the Mathadi workers so that they can practically


APMC auction hall under construction.

experience the ease and comfort in loading and unloading", he adds.

The complex was designed and planned over 182 hectare for projected turnover of ₹ 60 billion and creation of over one lakh jobs. It won Prime Minister's award for Implemented Urban Design Projects. CIDCO's endeavour was acclaimed after continuous use of 25 years and earned the Best Working Design Award at the hands of the President of India.

CIDCO changed the entire wholesale market systems by getting rid of the famous 'Hatta' system, where the rates of commodities were decided in secrecy. This system was modified to an open trading and open auctions. The physical planning and designing of the market was made conducive for open market. This reduced the malpractices and an era of free trading began.

The key features of the path-breaking project set standards for other market. It was planned to have shop-cum-godown unit for each trader with loading/unloading space. The passage for buyers with facility to approach all shops in a row of buildings was totally covered. Separate parking bays and movement spaces for large truck/trailers, common facility building for each trade and commodity; separate 'Q' up areas of trucks for each market as well as separate truck terminus have been provided.

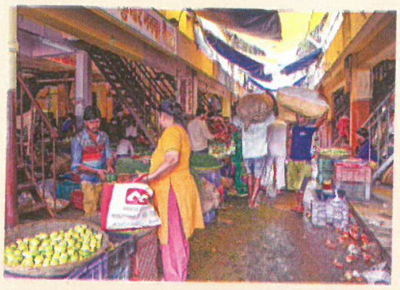
Onion and potato market had its traditional base at Maulana Abdul Kalam Azad Road known better as Duncan Road in South Mumbai with almost no space for loading and unloading of the consignments. Review taken by CIDCO showed that the waiting period for getting a space for docking was almost 12 hours. Loaded trucks used to queue up on the roadside waiting for their turns resulting in traffic jams. At APMC, it is spread over 9.2 hectares land and has 238-shop-cum-godowns and an auction hall. A truck terminal near onion potato market on 8.5 hectare, cold storage units, agriculture processing plants and service industries were developed in Vashi to make it the District Business Centre (DBC).

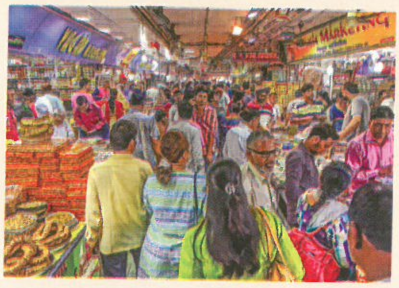
Subsequently, wholesale market for processed agricultural products, grains, pulses, sugar, jaggery, condiments, spices, dry fruits, coconut and edible oils was planned and construction got completed in February 1991. It houses 660 shop-cum-godowns and 272 traders' offices. Central Facility Building houses 412 shop-cum-godowns and 356 traders' offices.

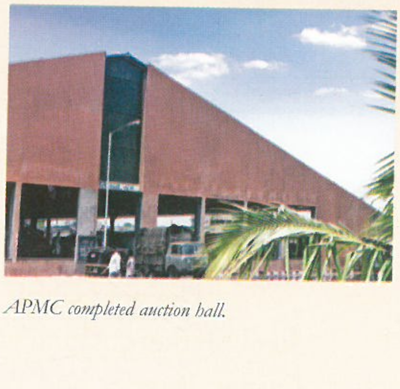
Wholesale grains market for cereal, pulses, rice, oilseeds with 420 shop-cum-godowns was completed in 1993. Wholesale fruits market with 1,029 shop-cum-godowns was ready by February 1996 while vegetables market with 936 shop-cum-godowns was constructed in the next month.[3]

APMC central building.

Inside APMC vegetable market







APMC completed auction hall.

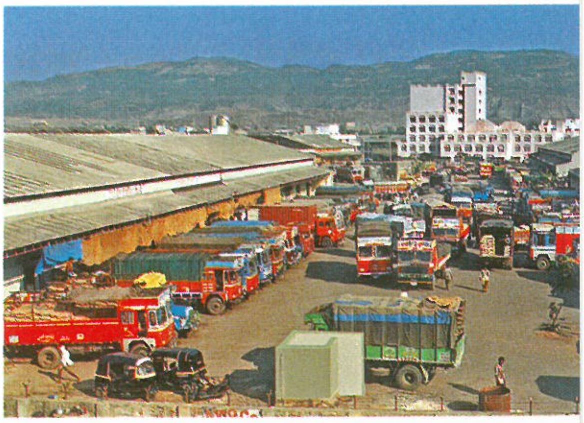
CIDCO's PUBLIC TRANSPORT: CIDCO Transport Corporation was inaugurated on 15th November 1979 as a subsidiary company of CIDCO and on 1st April 1980 it was named Bombay Metropolitan Transport Corporation (BMTC).

The next wholesale markets to be shifted to Navi Mumbai were Iron and Steel Markets. Along with these markets, major steel producers' stockyard from Carnac Bunder and Bhandup-Vidyavihar were shifted to Kalamboli node. In 1979, work started for wholesale steel market-cum-warehousing complex on 275 hectare in Kalamboli.

The success of shifting of wholesale markets marked the beginning of the "Golden Era" of development of Navi Mumbai as it provided the much needed impetus for development. It changed the character of Navi Mumbai to an employment generating a self-sustained town that otherwise would have been a dormitory town of Mumbai. Thus it underlined CIDCO's technical and progressive approach once again. The shifting of markets started a chain reaction of development. New avenues of employment, service employment, offices, and consequently residential and office space demands were on the increase. A pressure on Mass Rapid Transit was substantiated by the sudden spur in growth. CIDCO's role was tilted more towards provision of infrastructure than just providing housing and allotting plots to societies.

ON THE MARK

Nerul node was taken up for development in 1981. In the first year, 5,360 houses were planned for different income groups. The year 1982 marked the completion of 10,000 houses by CIDCO. Total 10,456 houses were constructed till March. In order to meet the fast-growing housing demand of various sections of the society, CIDCO had framed its housing policy incorporating self-financing principle using land as a prime resource in development of housing sector.



Trucks in the market yard for loading and unloading the consignment.

Belapur was fast taking shape as the Central Business District (CBD) and in compliance of the concept of the CBD, CIDCO allotted plots for commercial use to 15 public and private sector financial establishments in 1983. The beneficiaries of these plots included the RBI, IDBI, SBI, CBI; Central and State Government offices like CPWD, MWSSB and MPPB as well as multinationals like Hindustan Lever. This is the year when Airoli node was taken up for development.

In July 1984, in second tenure of VC & MD, Mr. L. C. Gupta, CIDCO moved to its own new Head Office, CIDCO Bhavan at Belapur from Vashi. Development of a truck terminal on 13.5 hectare plot on the South of Kalamboli Complex began in 1984. A residential complex with community

SAFE SHIPMENT : A container yard at Dronagiri.

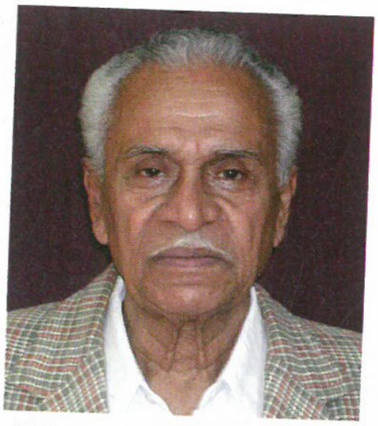
facilities was also developed opposite steel market. The 2000-line telephone exchange was completed in the same year.

SUDDEN SETBACK

1984 has been inked as an unfortunate year for CIDCO on two counts: closure of BMTC and the violent agitation of PAPs. In the first case, the CIDCO subsidiary died untimely death, the second case incident led to a model compensation package of Land for Land, now known as the 12.5% scheme.

CIDCO's road transportation wing, Bombay Metropolitan Transport Corporation (BMTC) ceased to operate in its fifth year owing to employees' dispute. It was established on 15th November 1979 as a subsidiary company of CIDCO. On 1st April 1980, it was named BMTC. Workers owning allegiance to all three unions, i.e. Maharashtra General Kamgar Union, Shramik Sena and CIDCO Employees Union in the BMTC called out a flash strike on 9th February 1984 without notice.

On the fifth day – 13th February, the unions gave a call for an indefinite strike. CIDCO applied for closure of BMTC on 27th March 1984 and the government granted closure on 24th May 1984. In the meantime, the BMTC filed a plea in HC to wind up the company in March 1986 and HC appointed Official Liquidator in November 1986. The Bombay High Court (company judge) dismissed CIDCO plea for the closure of BMTC on 10th April 1987. The Appellate Side of High Court granted the stay on 20th November 1987 and directed the Official Liquidator to continue having custody of the assets of the BMTC.[4]



ARCHITECT OF '12.5% SCHEME': D. B. alias 'Diba' Patil, the then leader of the Peasants and Workers Party fought for the reasonable and justifiable compensation for the PAPs.

PAP UNREST

The scattered villagers have started gathering under the banner of 'Jamin Bachao Samitee' opposing the land acquisition. A very influencial leader of the Peasants and Workers Party (PWP) from the area D. B. Patil, popularly called as 'Diba' derived from his vernacular initials, gave a call on 13th January 1984, for agitation of PAPs who had lost their livelihood in the guise of the land to demand a legitimate compensation and livelihood. He held a mammoth rally in front of CIDCO Bhavan gate. He announced a long march on 16th January 1984 from Jasai, his native place. In the meeting, his blood pressure shot up and he was taken to Mumbai's Sion Hospital. Agitators took out the march in the absence of Diba, as he was fondly called. The march culminated in a massive gathering at Dastan Phata near Jasai village.

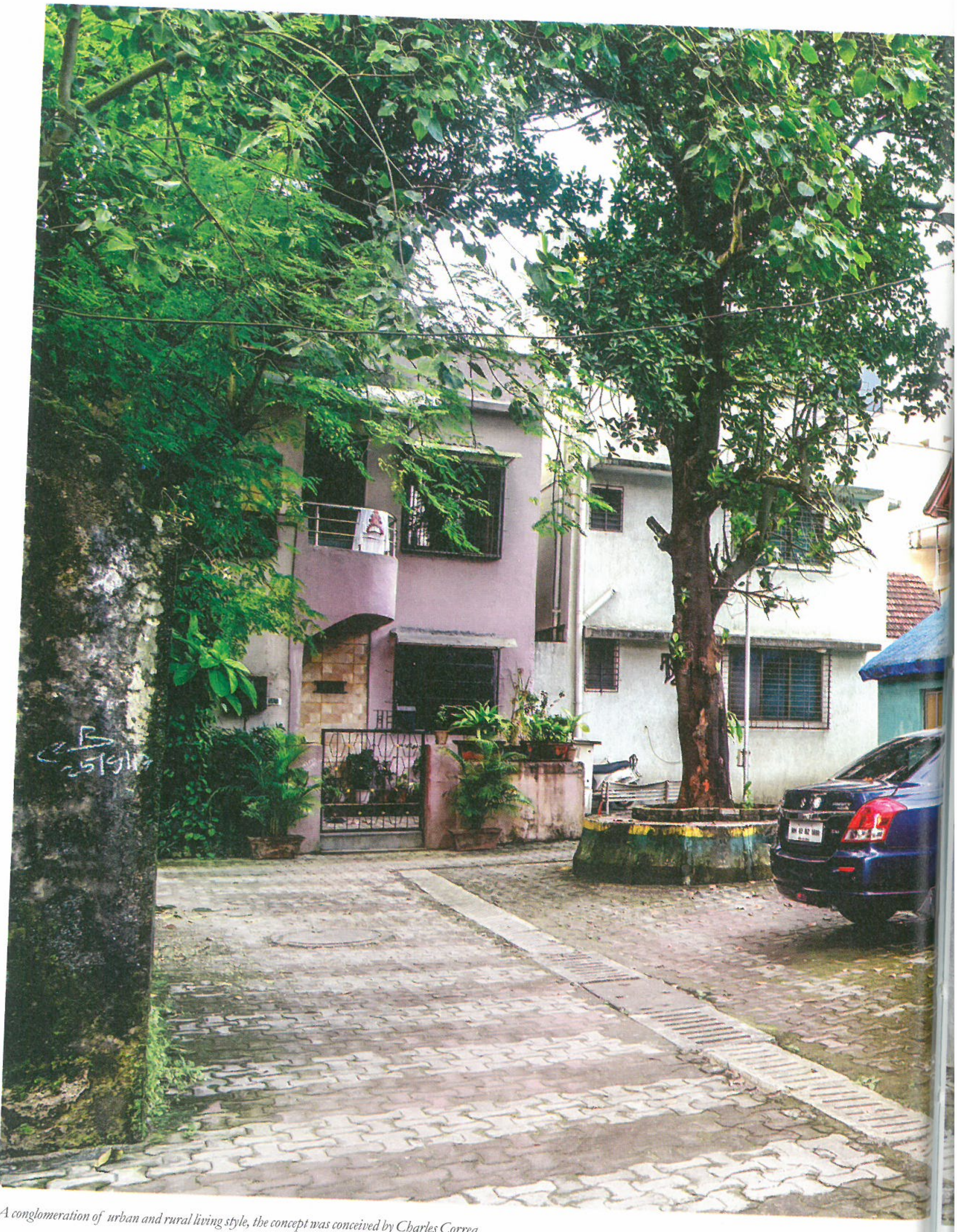
The police ordered a curfew through public announcement system abruptly. This move angered farmers. They refused to budge. The police threw tear-gas tubes at the mob and charged lathis on protesters. Agitation turned violent. The State Reserve Police opened fire in which 2 farmers, Raghunath Arjun Thakur of Dhutum and Namdev Shankar Gharat of Chirale village, were killed.[5]

The next day on 17th January, farmers gathered near Navghar Phata defying the curfew orders. The SRP again resorted to firing and 3 more farmers, Mahadev Hira Patil and Keshav Mahadev Patil, father-son duo of Pagote village and Kamalakar Krushna Tandel of Navghar villages were killed near Navghar Phata. All opposition parties got united and gave a call for Maharashtra bandh. Meanwhile, the government invited Diba for negotiations. Mr. Patil demanded Rs. 40,000 per acre as cash compensation. The government offered ₹ 30,000 per acre to the farmers whose land was acquired for JN Port project. But for compensation to Navi Mumbai PAPs, the government stuck to ₹ 27,000, this was not accepted by their leader D. B. Patil. In the meantime, land acquisition was stopped. All the land that was required for the Navi Mumbai was not acquired.

After prolonged negotiations, both parties came to an amicable settlement on 6th February 1986. The outcome was 12.5% scheme – it means that 12.5% of the land acquired from the individual farmer be returned to him after providing physical infrastructure like common tap connection and access road to the 12.5% plot. This was besides the cash compensation of ₹ 30,000 per acre. The government issued the notification to this effect in March 1990. In the meantime, some farmers accepted monetary benefits.

This Land for Land formula later turned out to be the model compensation in the Navi Mumbai project. Even the ancestral abodes of the PAPs in Gaothans, existing old structures, remained intact till today having provided with the basic physical infrastructure.

Diba, as the warrior leader of PAPs, further negotiated with CIDCO putting forward some legitimate demands that were accepted on the humanitarian ground. As per the mutual accord reached out on 7th October 1992, CIDCO agreed to give training of technical trades to the wards of PAPs, to



A conglomeration of urban and rural living style, the concept was conceived by Charles Correa.

give scholarship to students, to provide textbooks, notebooks, uniforms, food and shelter to the needy and meritorious students willing to continue higher academic and technical education, to make arrangements to give jobs to the trained PAPs. CIDCO provided placement to PAPs as per their eligibility and availability in private establishments at Mumbai and Pune until the government resolution was issued in 1980 to open the Employment Exchanges at various places.[6]

AESTHETIC ARCHITECTURE

CIDCO planned and launched The Artists' Village, in 1985. Over 600 independent houses are grouped around a rivulet which runs through the site making a lyrical content conducive for people engaged in creative activities. Each house has a small courtyard and/or terrace to enhance the built-up area. The houses are incremental, i.e. they can be extended. The principal bearing walls are independent of the neighbours, facilitating any house to be extended unilaterally.

There are five basic series of houses. Four of them are for single families; the fifth is for double units. The construction is of brick walls with Mangalore tile roof. The system is arranged on the site in such a manner that these spines of community spaces upon the hills behind. The house to courtyard to threshold, etc continues until one reaches the largest neighbourhood spaces where schools and other similar facilities are located. The housing project was completed in 1986.

Simplicity is the hallmark of Artists' Village. It could be well described in M. A. Laugier's words: "The small rustic hut is the model upon which all the wonders of architecture have been conceived. The pieces of wood raised vertically give us the idea of columns. The horizontal pieces of wood raised vertically give us the idea of entablatures. Finally, the inclined pieces that form the roof give us the idea of pediment".[7]

Architectural aesthetics is nothing less than a sculpture or a landscape painting. It uses much wider, larger and boundless canvas of sky. World monuments of Greek, Gothic, Victorian or Mughal architecture bear the testimony of this. The beauty in architecture is beyond geometry. The simplicity of curves and corners reflect grace and grandeur.

India's contemporary architect, planner and theoretician Charles Correa has designed and developed an iconic urban settlement Artists' Village that created a fine blend of rurban culture. Set on the picturesque backdrop of the Parsik Hill range in Belapur node, it was designed to augment the creativity of the people bestowed with the divine gift – poets, writers, dramatists, musicians, architects, planners.[8]

Architecture has changed its archetypes in different ages as per the need of the hour. Post World War architecture reflects modernism globally followed by contemporary architecture that could be attributed to Industrial Revolution. It brought new building products that created a great change in construction methods. New activities required new built environments, which brought new solutions and new forms that express the spirit of new age of 20th Century.[9]

A pioneer of Navi Mumbai, Correa was the Chief Architect with CIDCO between 1970 and 1975. He believed that the quality in architecture and planning is the result of understanding constraints that need not be ignored or avoided. His creations were influenced by the traditional architecture of India. He reverted to an old tradition of verandahs overlooking the courtyards.[10]

Artists' Village Valley is rated first as far as the biodiversity richness is concerned. The 210-hectare area lies cradled between the Valley Park and Kharghar Hills. The area comprises of several different landforms such as a lake, waterfalls and a stream bed. This geological diversity makes Artists' Village the richest pocket with 174 plant species in all seasons.[11]

Wholesale Steel Market, Stockyard and General Warehousing Complex got completed in 1985. Development of Kopar Khairane node was initiated in 1986. Work for Mankhurd–Belapur via Vashi and Nerul rail corridor was commissioned in 1986. Work for 1,837-metre (6,027 ft) long Thane Creek Railway Bridge joining Mumbai with Navi Mumbai started in 1986 to connect people and cultures of the two cities. The new 6-lane creek bridge was also

Inside the Artist Village.

opened for the vehicular traffic in the same year. Belapur-Panvel corridor work began in 1987 and the task was assigned to IRCON Ltd.

SHELTER FOR ALL

In the making of Navi Mumbai, CIDCO took utmost care to relocate urban people to the new land by providing all necessary civic amenities including housing facilities on a priority basis, besides public transport, power, drinking water, market, schools and colleges.

The year 1987 marked the turning point in the CIDCO's housing policy. CIDCO planned and executed housing projects through Demand Registration Schemes (DRS), considering the increasing demand for houses by the people of different strata. In June-July 1987, CIDCO for the first time undertook a DRS survey in Vashi, Belapur, Nerul, New Panvel, Airoli, Kopar Khairane and Kalamboli nodes to assess the growing housing needs. In all 54,963 applicants registered. In all 18,552 houses were constructed under DRS in Vashi, Nerul, Kopar Khairane, Airoli, Sanpada, Belapur, New Panvel and Kalamboli nodes.

The Board of Directors decided to appoint developers to construct more houses to meet the demand and appoint Construction Management Consultants for supervision. The landmark decision was in accordance with the new housing policy of the Central Government. Since then, the Corporation ceased to play its

CELEBRATION : A housing project by CIDCO in Kharghar.

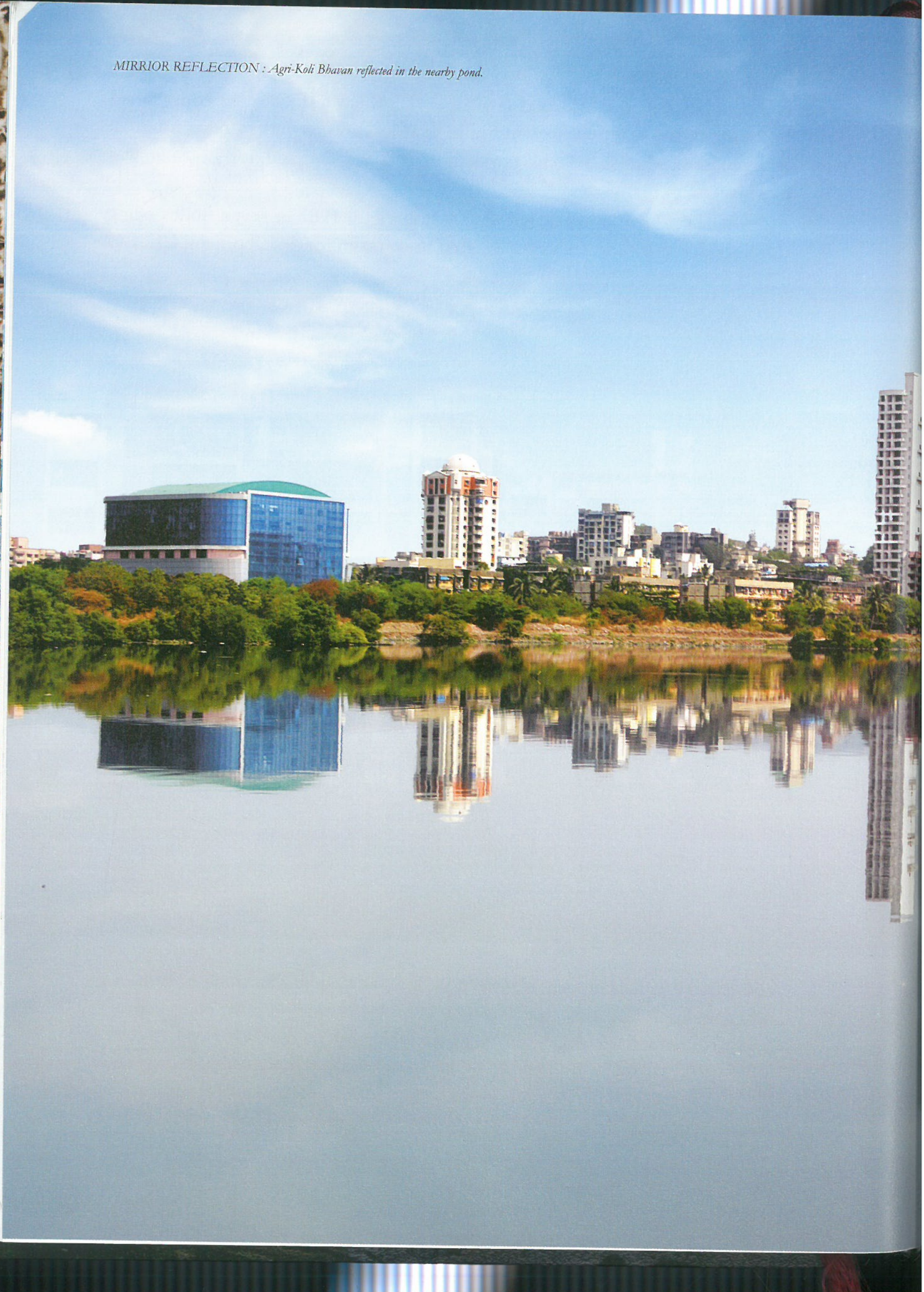
role as a developer and turned facilitator. Till then, CIDCO had constructed houses with the manpower of in-house planners and engineers. Navi Mumbai had recorded almost 3 lakhs population and the demand for housing was increasing.

CIDCO had constructed 65,000 houses till 1987 in seven nodes being developed at that time. In Vashi, the first node taken for development, CIDCO constructed 15,474 houses, this included Sanpada node. The stock of houses in other nodes at that time was Nerul – 10,904, Belapur – 6,538, New Panvel – 5,581, Kalamboli – 6,696, Airoli – 8,887 and Kopar Khairane – 10,968.

MASS HOUSING

CIDCO's Mass Housing Department was at its peak. Mass Housing

MIRRIOR REFLECTION : *Agri-Koli Bhavan reflected in the nearby pond.*



Schemes for 20,000 tenements in Airoli and Kopar Khairane nodes were taken up in 1988 under the Bombay Urban Development Project financed by World Bank. On 10th October 1989, the first lot of housing scheme was inaugurated. In February 1998, the Board of Directors approved a proposal for allotment of residential plots to cooperative housing societies. The State Government approved it on 5th September 1989 setting the priorities for the deserving groups like government servants, SC/ST categories, sportsmen, artists, ex-servicemen, freedom fighters, etc. The directives also made it mandatory that the applicant must have a stay of 15 years in Maharashtra at the time of applying. In December, an advertisement for allotment of 250 society plots was published and the first scheme to allot plots for Housing Societies was launched in September 1995 for which 8,746 societies responded.

It implemented various emerging technologies like Prefab Channel Slab, 3-S Siporex System, Tunnel Form, Advanced Tunnel Form, MIVAN and earthquake-resistant technology. CIDCO had constructed 65,000 tenements in seven nodes for different income groups by the end of March 1991.

Initially CIDCO's housing projects were aided by World Bank. The first and the major project under BUDP was at Airoli. CIDCO constructed and allotted 5,000 Site and Service houses to Mathadi workers of APM at Kopar Khairane in 1991. This was also WB-added project under BUDP II. In the same year, BUDP III project launched in Nerul, Kharghar, Kalamboli and New Panvel for 11,238 serviced residential sites; 7,120 of them core units for urban poor. By the time 10,000 residential units, including 6,000 core units were ready at Ghansoli and Owe in Kharghar node.

CIDCO's first water supply project, 150-MLD Hetwane Project, was taken up for development in 1993. The State Government had allotted 100-MLD water for Navi Mumbai from Hetwane Dam in 1990.

FILTER PLANT: *Water in the reservoir is filtered at Jite plant before it is supplied through pipeline.*

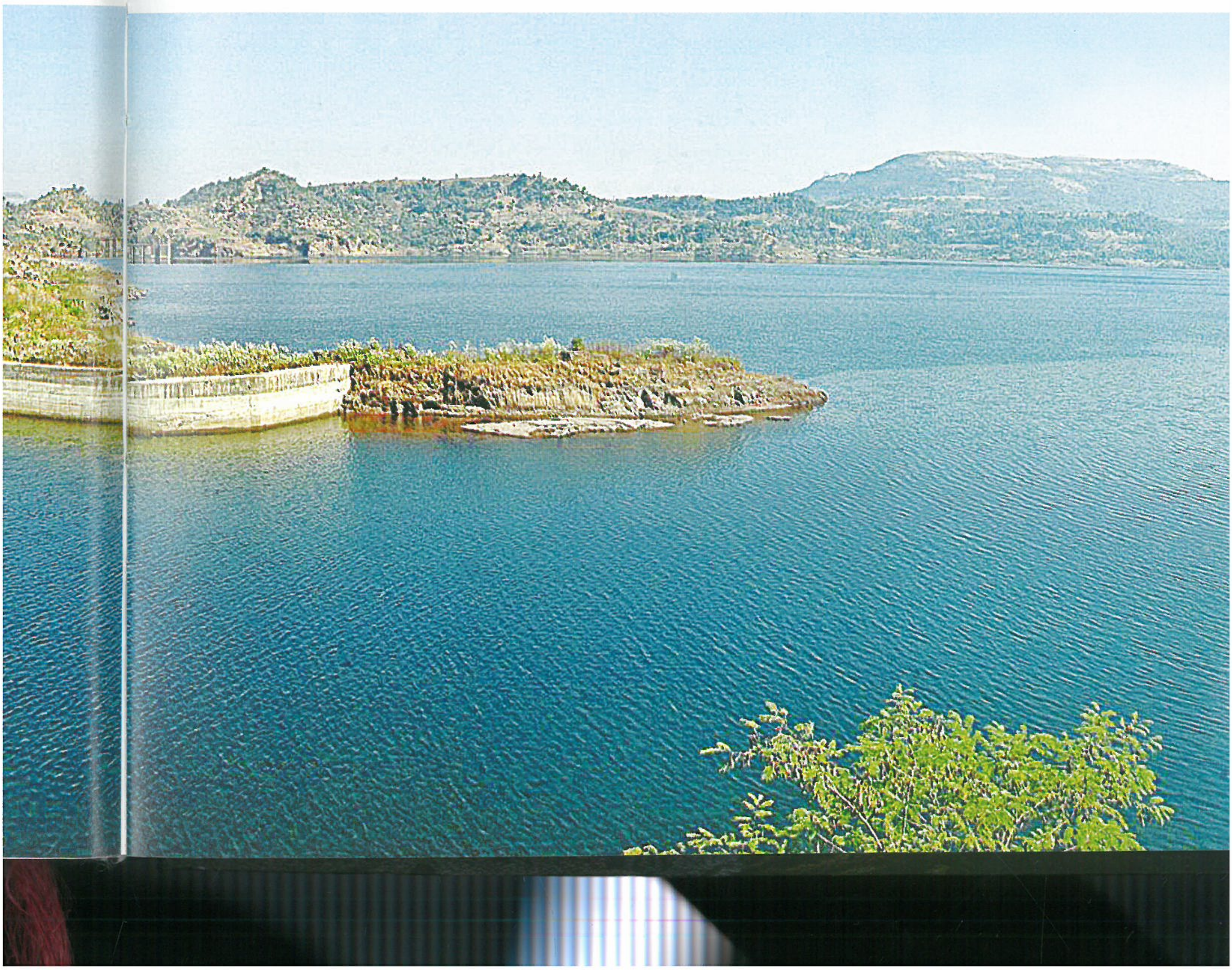
On 26th May 1989, Jawaharlal Nehru Port at Sheva was inaugurated and with this CIDCO took the opportunity to develop Dronagiri node to cater to the port-based commercial warehousing and industrial activities. In Dronagiri node, in warehousing and allied projects, thousands of PAPs have got employment directly or through contractors. Kalamboli wholesale Iron and Steel Market Complex was inaugurated in October 1989.

Kharghar and Ulwe nodes were planned in 1989. In the same year, CIDCO appointed renowned architect-planners to plan structures of different nodes. Mr. Charles Correa was for Ulwe and Mr. B. V. Doshi for Kharghar and Mr. Kanvinde for Dronagiri. This played an instrumental role in breaking the monotony of nodal structure and gave a distinct character to every node. In the same year, construction of commercial complexes over Vashi, Sanpada, Jui Nagar, Nerul and Belapur began in cooperation with the Railways.

QUENCHING THE THIRST:The 150-MLD Hetawane reservoiris CIDCO's first water supply project that caters to Navi Mumbai citizens as a major source of potable water.

On 21st June 1990, Mr. R. C. Sinha took over as the MD and continued till 26th April 1994. In 1990, Sanpada node was taken up for development. Considering the need of the APMC, a major physical infrastructure work for Banking Complex started in the node. The complex housed 7 banks. In the same year, 800-mm drinking water pipeline from Kalamboli to Belapur was laid. Work of laying 1200-mm and 900-mm pre-stressed concrete pipeline from reservoir at Shil to Kopar Khairane for additional 35-MLD supply from MWSSB Patalganga also started around the same time.

Building the stock of houses supported by social infrastructure like community centres, markets, parks, education institutes, playgrounds, etc helped attract people to the new land. CIDCO activities recorded sharp growth in this decade and the graph of surplus rose high first time after 10 years. The company annual reports showed a profit of ₹ 2,71,864 as on 31st March 1980. By 31st



March 1986, the surplus rose to ₹ 7,90,800. Net surplus at the end of March 1990 was ₹ 51,08,820.[12]

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CHAPTER

VI

ON THE FAST TRACK
(1991 to 1995)

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On the Fast Track

~1991-1995~

> *Without continual growth and progress,*
> *such words as improvement, achievement,*
> *and success have no meaning.*
> *-Benjamin Franklin*

POPULATION DIVERTS

The impact of Navi Mumbai on the growth of Mumbai was reflected in the 1991 Census that recorded a 10 per cent decrease in population of Greater Mumbai, compared to the previous decade. For the island city (a part of Greater Mumbai), growth in the decade of 1980s was negative for the first time. The reason for this phenomenon can partly be attributed to the growth of extended suburbs, and partly to Navi Mumbai which provided an alternative path to growth.

Navi Mumbai jurisdiction of Thane district recorded 24% population growth in the decade in 1991 census. The estimated total population of New Bombay including villages and two more nodes in the Eastern side was half a million in 1990-91. Population in Vashi had touched 150,000 mark. Population growth after 1991 recorded nearly at 16% rate per annum.[1]

The spurt in Navi Mumbai's growth was powered by the progress of 17-km Mankhurd-Belapur harbour railway line, the Mass Rapid Transport System; 14-km railway line between Kalwa and Turbhe, commissioning of high-tech port Nhava-Sheva, development of Wholesale Markets for perishable/nonperishable/processed agricultural produce at Vashi as well as sale of plots and constructed premises for Central/State Government offices in CBD Belapur.

The city had reached a high level of development in the Northern part between Airoli and Belapur alongside two major roads, namely the Sion-Panvel Expressway and Thane-Belapur Road. The graph of development was on ascending position in Vashi, Sanpada, Nerul, Airoli, Kopar Khairane and Belapur.

NEW CIVIC BODY

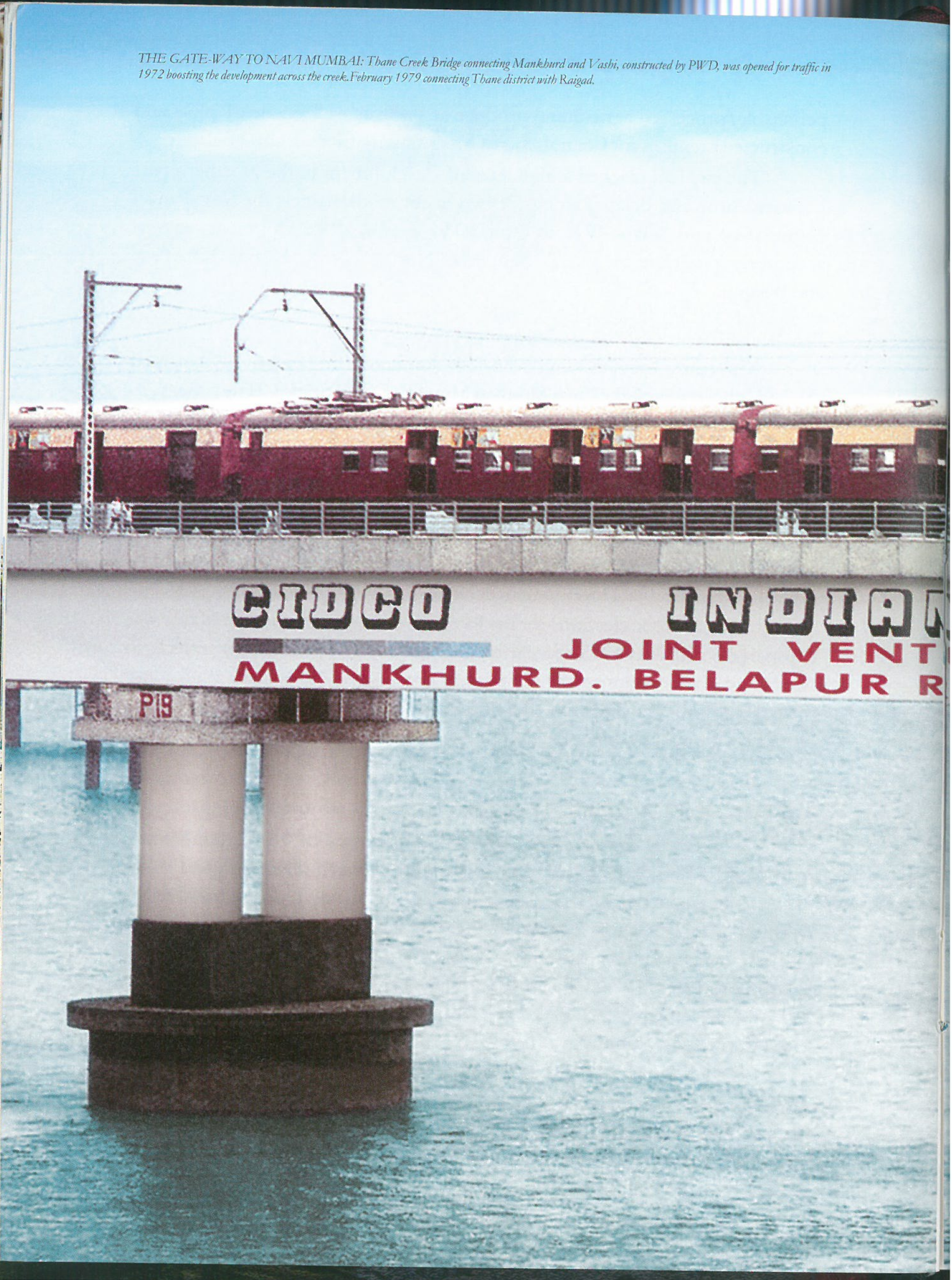
The year witnessed some major developments. 1st January 1992 marked the announcement of the Navi Mumbai Municipal Corporation. The process to form new civic bodies had started with the State Government notifications in 1990 inviting suggestions and objections for separated Municipal Corporations for the North and South parts of the Navi Mumbai under CIDCO's jurisdiction. NMMC was constituted in the North part of the land comprising 7 nodes of Airoli, Kopar Khairane, Vashi, Sanpada, Nerul and CBD Belapur developed by CIDCO. The area covered 45 villages, 15 of them were earlier in the Mumbai Metropolitan Regional Development Scheme.

After the civic elections for the local self-government the first Mayor was coroneted on 9th May 1995, therearfter CIDCO started handing over services to NMMC in phased manner and the process got over on 1st January 1998. Since then, the NMMC is maintaining the physical and social infrastructure developed by CIDCO, yet on some open plots development will continue by CIDCO as planned.

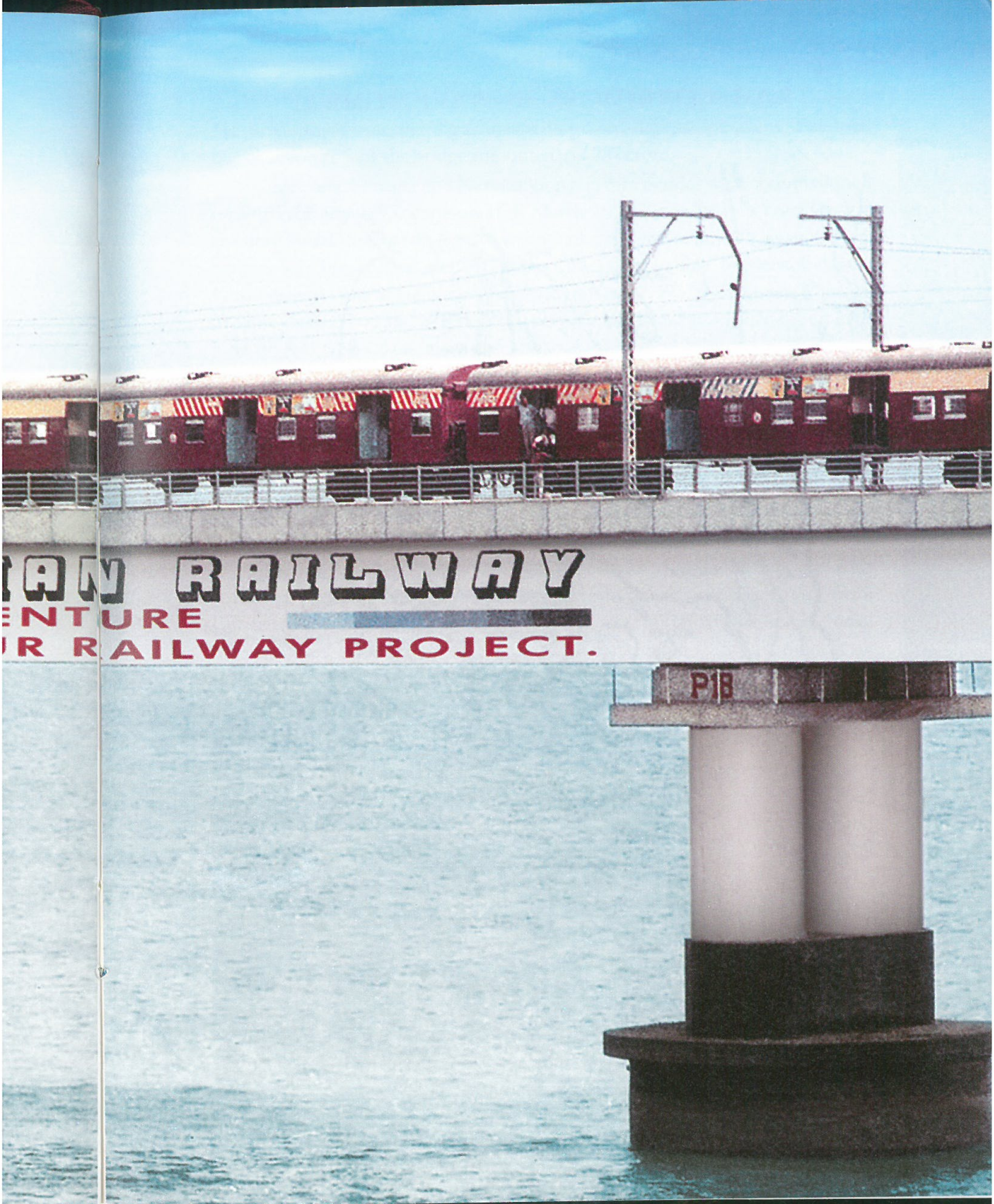
EXTENDED HARBOUR LINE

1992 is also the momentous year in the history of Navi Mumbai as it marked extension of Harbour Railway corridor between Mankhurd and Vashi. Havineg derived its name from Mumbai Harbour, it runs almost parallel to the coastline. CIDCO wrote a new chapter on 9th May 1992 when President, Hon. R. Venkataraman, flagged off the first train between Mankhurd and Vashi to mark the opening of the Thane Creek railway bridge constructed jointly by the Indian Railway and CIDCO. Till date Mankhurd, being the dead end of land, was the Harbour Line Terminus.

Mr. Venkataraman also commissioned Vashi station. Railway Minister Mr. C. K. Jaffer Sharief, Railway Board Chairman Mr. Y. P. Anand, Chief Minister Mr. Sudhakarrao Naik, Maharashtra Urban Development Minister Mr. Sushil Kumar Shinde and Minister of State for Urban Development Mr. Madan Bafna,



THE GATE-WAY TO NAVI MUMBAI: Thane Creek Bridge connecting Mankhurd and Vashi, constructed by PWD, was opened for traffic in 1972 boosting the development across the creek. February 1979 connecting Thane district with Raigad.

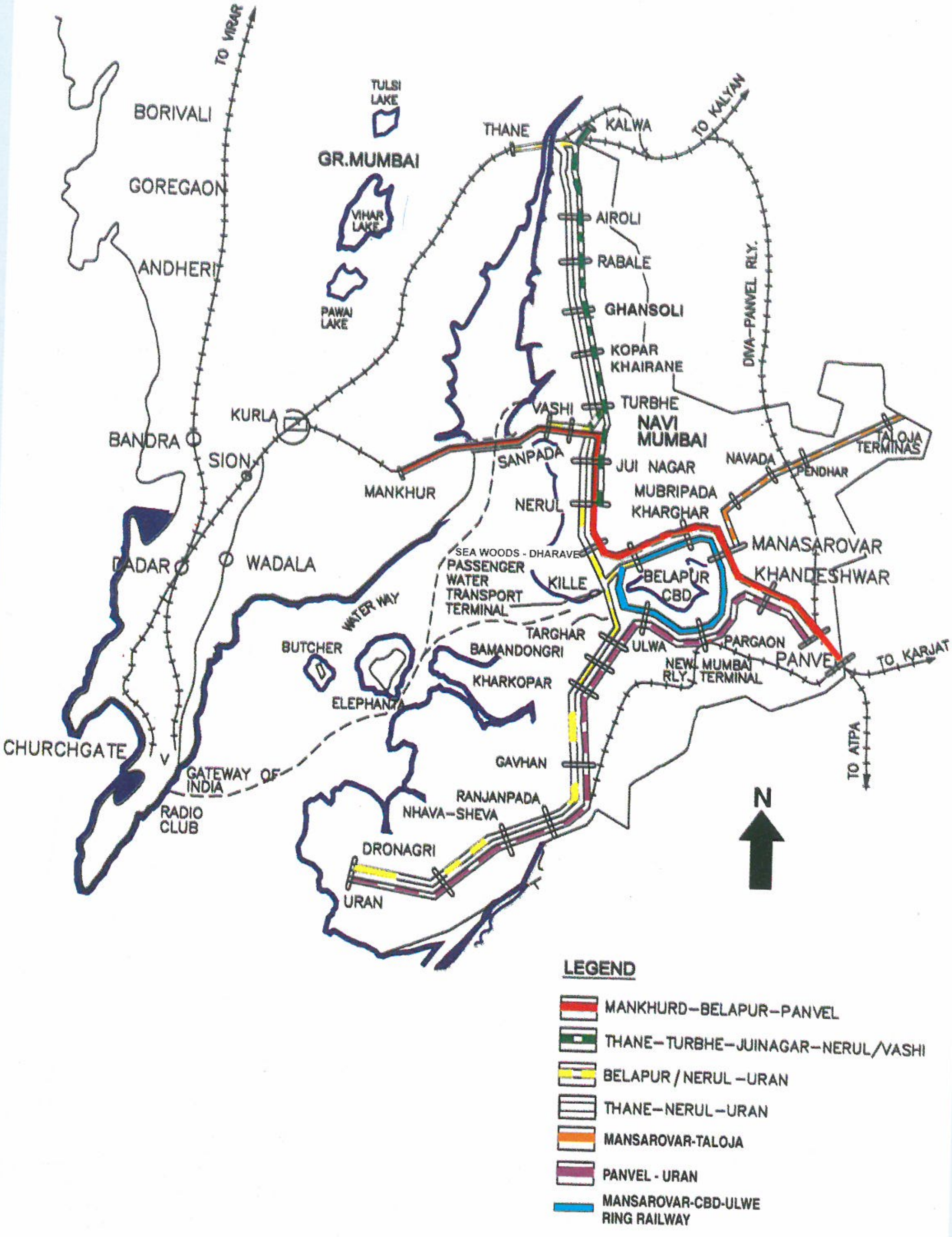


AN RAILWAY

ENTURE

UR RAILWAY PROJECT.

RAIL CORRIDORS IN NAVI MUMBAI



CIDCO Chairman Mr. Nakul Patil and Vice-Chairman & Managing Director Mr. R. C. Sinha were the dignitaries who graced the historic event. The total construction cost of the bridge amounted to ₹ 287 crore.

Sanpada, Juinagar and Nerul stations on the corridor were commissioned on 9th February 1993 while on 16th March 1993 Vashi-Belapur corridor was commissioned.[2] Seawoods-Darave was not planned at that time. Belapur Railway Station was inaugurated on 16th June 1993. The stretch between Belapur-Khandeshwar was inaugurated on 25th January 1995 by Railway Minister Mr. Ram Naik. He commissioned the complete Belapur-Panvel corridor on 29th June 1998.

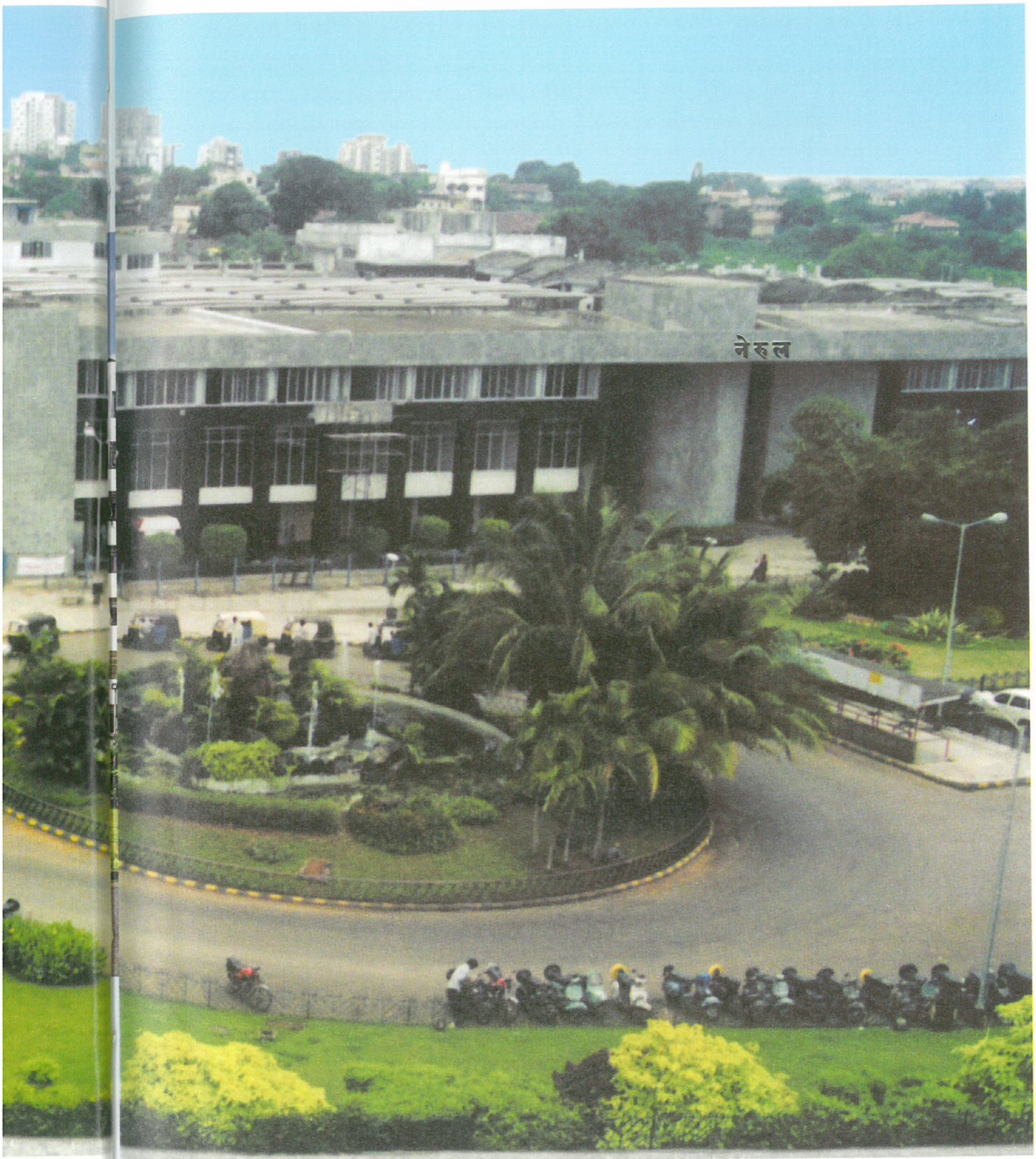
It is the Harbour corridor that marked the beginning of electrification of Indian Railways. The first EMU (Electrical Multiple Unit) rake colloquially called as local train ran between VT (now CST) for Kurla became operational on 3rd February 1925. CIDCO has taken the corridor right up to Panvel to merge with the Konkan Railway. It has 24 stations. Harbour Railway is an integral part of Central Railway's Mumbai Suburban Railway, Harbour Line is the backbone of Navi Mumbai Transportation and is also known as the lifeline of the city.

The Central Railway suburban networks that comprises of four corridors. Besides the Trans-harbour, the other three corridors start from Chhatrapati Shivaji Terminus (CST) is the longest suburban rail-line in India. The corridors stretched up to Karjat and Kasara called as mainline bifurcate

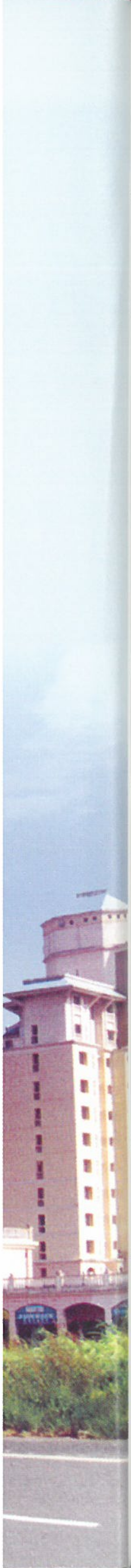
CONNECTING CULTURES: Thane Creek Railway Bridge connected two cities, two cultures. It also extended harbour line of the Central Railway that was electronically inaugurated on 9th May 1992 by former President of India, C. Venkataraman; dignitaries among others on the dais included then Chief Minister Mr. Sudhakarrao Naik and Urban Development Minister Mr. Sushilkumar Shinde.

TRANS-HARBOUR : *Turbhe Junction connects North to West and South.*

DISTINCT DESIGNS : All Harbour and Trans-harbour railway stations in Navi Mumbai are graciously designed that give each one a different look with the ambiance around on both sides and a beautiful forecourt.


नेरुल

NRI COMPLEX : Located on 2,30,000 sq. mt. with beautifully landscaped scenic surroundings overlooking the sea, the 941-apartments first phase of the Seawoods Estate Complex focused on the select group of foreign citizens of Indian origin, affluent Indians as well as corporate executives.



from Kalyan. Tracks for the long-distance North And South-bound trains are common.

The 7-station Thane-Turbhe-Vashi Trans-harbour corridor was commissioned on 9th November 2001 by Railway Minister Mr. Lalu Prasad Yadav.[3] All the stations on the Vashi-Panvel and Vashi-Thane are distinctly designed making them architectural marvels. Every station has forecourt area with multi-modal transit facility. The floor-space above the railway line has been commercially utilised. The stations are maintained through private parties. Every station has forecourt area with multi-modal facilities. Nerul and Belapur-Uran corridor is under construction. The 27-km corridor will have 10 stations.

THE NRI COMPLEX

CIDCO's first modern housing project, the 1,536-apartment Seawoods Estate Complex came up in 1994. The 350-crore project designed by eminent architect Hafeez Contractor has 2, 3 and 4 bedroom apartments and duplex penthouses with terrace space; covered and uncovered car parking. The 941 apartments first phase got sold like a hot cake. The second phase comprised of 595 spacious houses.

The amenities offered in the complex were aimed at providing the lifestyle that suits the Non-residential Indians (NRI). CIDCO focused on the select group of Non-resident Indians, foreign citizens of Indian origin, affluent Indians as well as corporate executives, hence it was known as the NRI Complex. Every apartment was equipped internally with the ready-to-use fixtures for electronic gadgets and gizmos.

Located on 2,30,000 sq. mt. with beautifully landscaped scenic surroundings overlooking the sea, the complex offered free membership to an exclusive Spanish Villa type clubhouse with facilities of swimming pool, indoor stadium for lawn tennis, table tennis, squash, billiards, badminton etc; restaurant and an exclusive bar; health club with a gym, sauna bath, steam bath, Jacuzzi and cold water shower.

WINGS FOR DEVELOPMENT

As Navi Mumbai took a concrete shape of a mega city, CIDCO realised the need of an airport. Mr. R. C. Sinha had first proposed a 'city aerodrome' in 1992 with a vision to upgrade it into the International Airport after five years from its becoming operational, says Mr. R. K. Jha, former Chief Planner, Transportation and Communication, who worked on the project. Although planned for one tarmac, it included all the facilities of apron, hangar for Dornier Class aircrafts, terminal buildings, car parking and bus terminal.[4]

CIDCO carried out a techno-economic feasibility study for the airport in 1992 through consultants. The findings indicated that there was a considerable demand for an airport in the Bombay Region to cater to private aircrafts of business houses. Till the time, need for an International Airport in the jurisdiction of Mumbai Metropolitan Region was not felt. The Mumbai airport was running to its capacity. Hence the domestic airport was planned.

For the proper location, CIDCO searched almost 20 sites within the Metropolitan Region and zeroed in on the site near Kopar on the South-East of CBD Belapur. It was envisaged that the airport would make the CBD of Navi Mumbai a better place to locate offices and business establishments in the city making it a counter magnet to Mumbai. The airport layout was planned blocking one side of the creek. However, no environment issue had cropped up at that time. Shifting of villagers from a few hamlets was also not a major problem then, Mr. Jha, confirmed.

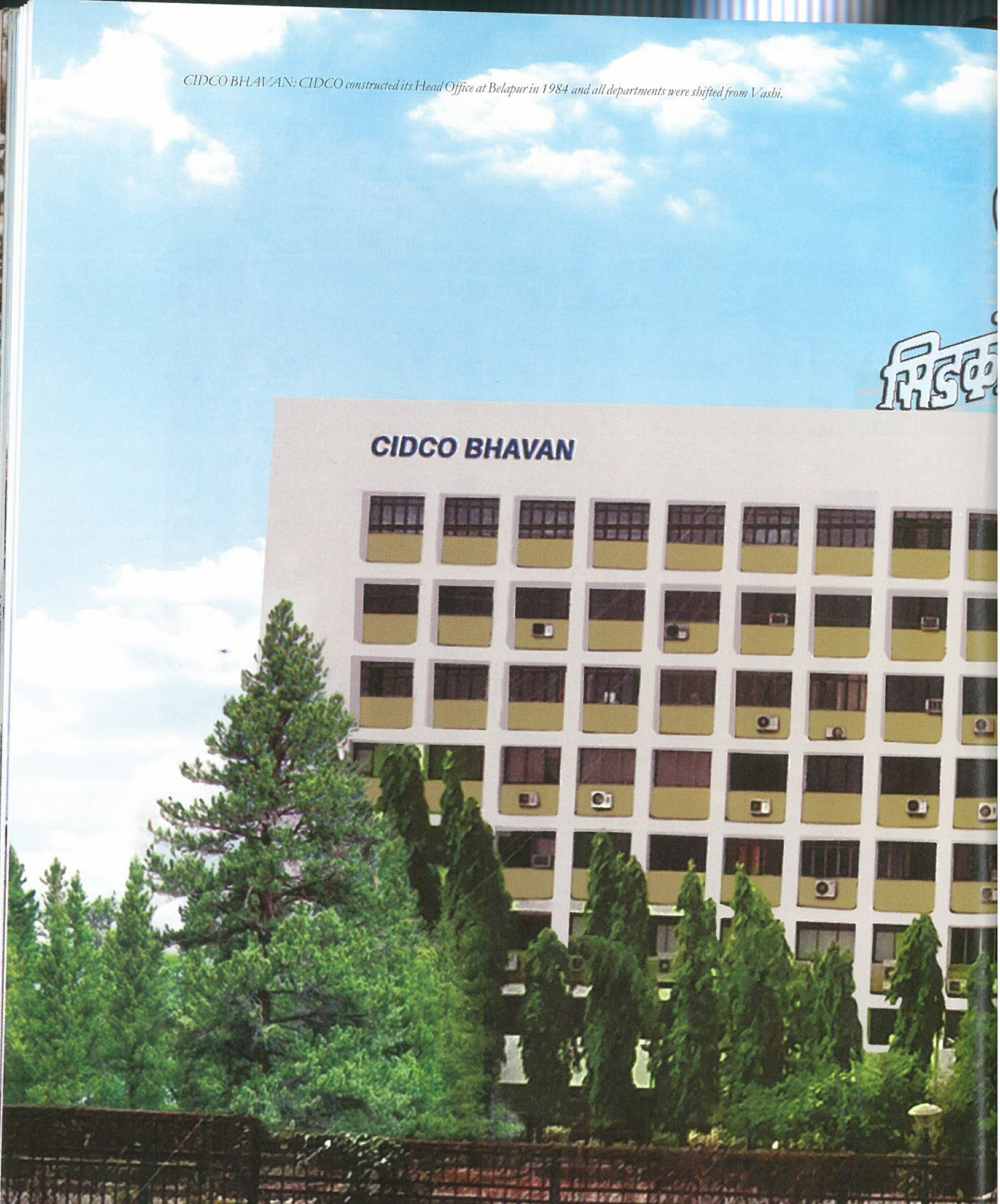
CIDCO appointed Rail India Technical and Economic Services (RITES) for Traffic Study that was carried out in 1994. RITES report preferred the site for better connectivity through road, rail and water. Hovercraft services had started on 29th August 1994 by a private company between Gateway of India and Vashi/Belapur. The motorboat used to traverse the 24-nautical mile distance in nearly 40 minutes;[5] Seawoods-Uran Railway Corridor was also planned by that time. This enhanced connectivity and gave fillip to the proposed airport project. In 1995, the Board approached the Civic Aviation and Defence Ministries and got clearances in the same year.

CIDCO made presentation on the domestic airport upgradable to the International Airport in the first-ever two-day 'Advantage Maharashtra', a foreign investors' conference held in Mumbai on 17 & 18 February 1997.[6] A Los Angeles company was appointed consultant for bid draft. Tenders were called in 1996 to develop the airport on Built Operate and Transfer (BOT) basis. The project cost at that time was ₹ 4,000 crore. Four international players including airport companies of Frankfurt, Zurich and Singapore responded. They raised two major issues of contention.

Firstly, they wanted that the land be mortgaged to raise funds. Secondly, they demanded operational coordination with the Mumbai Airport already operational in space jurisdiction of the region. In November 1997, Ministry of Civil Aviation (MoCA) constituted a committee to examine the various sites for a

SEAWOODS II : The 595-apartment second phase of the 350-crore project was launched following overwhelming response to the first phase.

CIDCO BHAVAN: CIDCO constructed its Head Office at Belapur in 1984 and all departments were shifted from Vashi.



CIDCO

second airport for Mumbai to ease the passenger burden on the Mumbai airport, considering the projected capacity of the Mumbai Metropolitan Region that would reach 100 MPPA by 2030 and CSIA that has the ultimate air traffic capacity of 40 million passenger per annum (MPPA).

SILVER JUBILEE

On 17th March 1994, CIDCO celebrated its Silver Jubilee. The year signifies with the completion of CIDCO Bhavan, the Head Quarters where staff had already moved in, in a phased manner. Its registered Head Office remained at the Nirmal Bhavan, Nariman Point in Mumbai. Other major incidents that took place in the year include: completion of NMMC Head Quarters and Konkan Railway buildings at Sector 11 and construction work began for Belapur-Panvel Corridor.

On 26th January 1995, in appropriation of the Republic Day, Chief Minister Sharad Pawar inaugurated the wholesale fruit and vegetables market constructed by the Mumbai APMC on the 17.15-hectare land allotted by CIDCO. CIDCO's net surplus skyrocketed by 1995. At the end of March 1991, it was ₹ 1,48,05,809 and the same reached to ₹ 1,17,46,302 by 31st March 1995.[7]

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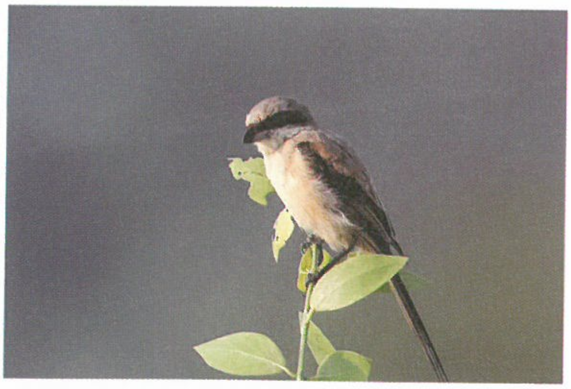


CHAPTER VII

OVERCOMING RECESSION
(1996 to 1999)

Overcoming Recession

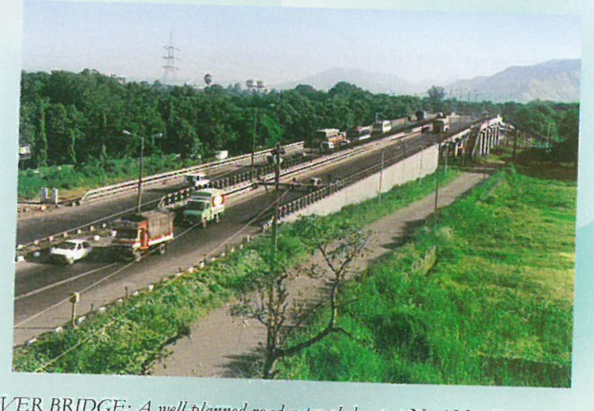
~1996-1999~

The mission of art is to
represent nature not to imitate her.
-William Morris Hunt

MISSION CONTINUES

As a fall-out of the Free-economy Policy adopted by the Central Government in 1990 and the uncertainties in political arena that finally culminated in change in the State as well as Centre in 1995-96, the economic recession hit the Real Estate Market in early 1996. It badly affected CIDCO, a big player in Navi Mumbai Real Estate arena. The marketing scenario changed from seller's market to buyer's market.

CIDCO meticulously planned various projects and created infrastructure assets, some of them became milestones later. Increase in profits facilitated



FLY-OVER BRIDGE: A well-planned road-network has put Navi Mumbai on the fast track.

CIDCO to continue its mission of planning a self-sufficient and sustainable city.

Use of Reserve Price formula for the plots to be sold for different uses has been the base of CIDCO's self-financing policy. The land that was acquired by the State Government and handed over to CIDCO was converted into the main source of revenue in the General Development Control Rules. This is a unique phenomenon and CIDCO is the pioneer in the history of the new towns in Asia[1]. In the initial years, the returns were negative owing to deficits due to no sale of plots.

Since 1979, the returns have been positive and showed zigzag pattern from 1985 onwards owing to the rise and fall in sales. However, the Land Use Policy helped CIDCO sustain even during the recession. After 1996, the receipts increased gradually due to increase in sale of plots and miscellaneous receipts like lease rent, lease premium, power connection charges, water resources development charges, etc.

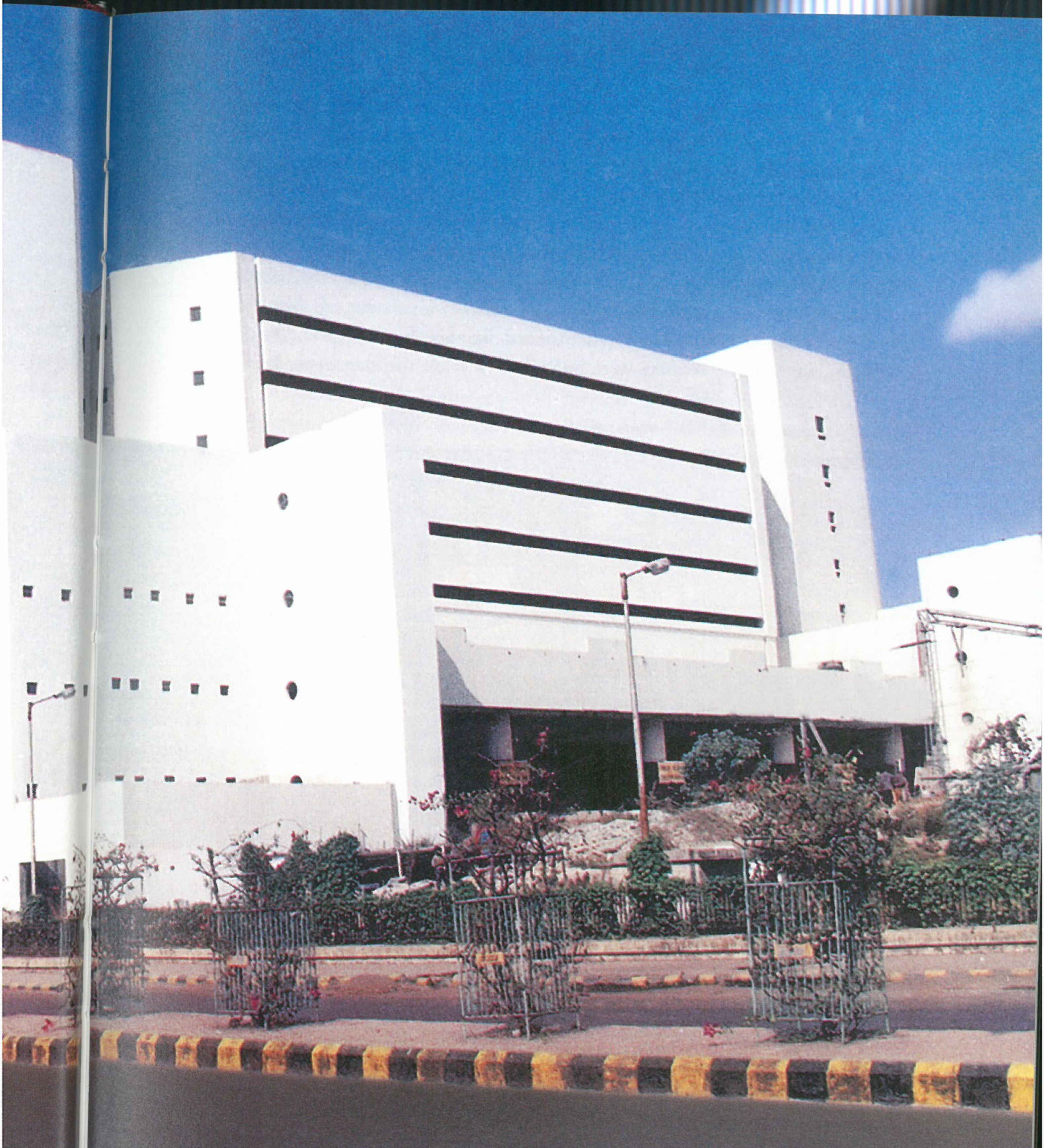
The year 1997 marked the planning of Thane-Vashi corridor and Belapur-Panvel double line project, International Technology Centre (ITC) at Belapur, Domestic Airport, Hardware Park at Dronagiri for Electrical/ Electronics industries and Industrial Park at Kalamboli for Engineering, Leather, Plastic, Garments and Navi Mumbai Special Economic Zone.

Development of IIP in the Vashi Station Complex started in 1996 and was inaugurated on 14th June 1998. It has over 6 lakh sq ft of built-up premises. It opened up employment opportunities in the Information Technology sector with IT giants like STPI, VSNL, 3i Infotech, Sify, Tracemail (India) Pvt. Ltd., Cyquator Technologies Ltd., Inter-connected Stock Exchange of India, The Times Group and others.

NH-4 Road-over Bridge was inaugurated and commissioned on 17th June 1997. Construction of the bridge had started in October 1993. It is a part of the National Highway No. 4. Located near Khanda Village, it crosses over Belapur-Panvel railway line. Designed by Gilcon Project Services Limited, its total cost of ₹ 10.84 crore is totally incurred by CIDCO. With approaches on Mumbai and Pune sides, its total length is 465 mt.

Matheran Road-over Bridge was inaugurated and commissioned on 7th April 1998. Using pile foundation and open foundation, construction for it had started in August 1993. It is constructed at the crossing of railway line and road connecting New Panvel and NH-4. Designed by S. N. Bhobe and Associates, its total cost of ₹ 10.40 crore is bore by CIDCO. Having approaches on NH-4 and New Panvel sides, its total length is 478 mt.

THE NEW ERA: *The International Technology Centre (ITC), Belapur is city's huge iconic structure.*



CIDCO made a presentation in the first-ever 'Advantage Maharashtra' held in Mumbai on 17 and 18 February 1997 on the domestic airport that could be upgraded to the International Airport. CIDCO had identified most suitable site, integral to the development plan of the city. Navi Mumbai was considered the most suitable location for a new domestic airport as it is expected to absorb the growth and shift in business and commercial activity of the region. At this juncture on 28th May 1997, CIDCO submitted a proposal of the 350-hectare domestic airport to the State Government.

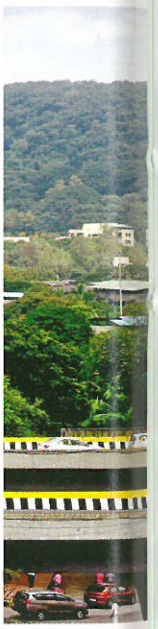
The foreign investors' conference turned out to be a turning point for the Navi Mumbai Airport. Tenders were invited to develop the airport on Build-Operate-Transfer (BOT) basis at the estimated cost of ₹ 4,000 crore at the time, four international players including airport companies of Frankfurt, Zurich and Singapore responded. They raised two major issues of contention.

PICTURESQUE PLATEAU: Flyover at Belapur Junction on the backdrop of Parsik Hill.

In November 1997, Ministry of Civil Aviation (MoCA) constituted a committee to examine the various sites for a second airport in Mumbai Metropolitan Region (MMR) considering that the projected capacity of the Mumbai Metropolitan Region would reach 100 (MPPA) – Millennium Passengers Per Annum by 2030 and that the Chhatrapati Shivaji International Airport (CSIA), Mumbai has the ultimate air traffic capacity of 40 MPPA.

A proposal submitted by CIDCO to the Centre for the Navi Mumbai

Special Economic Zone (NMSEZ), a special duty-free enclave was approved in 1999. The area near Jawaharlal Nehru Port in Dronagiri node was identified and was planned on 1,190 hectares. It was planned in accordance with the new economic policy of Liberalization, Privatisation and Globalization adopted by the Central Government to bring in foreign direct investment. Considered as an engine of progress to enhance economic activities in the region and the State, the NMSEZ was planned keeping in mind the easy access to seaports – the Bombay Port and the Jawaharlal Nehru Port; proposed Navi Mumbai International Airport, besides road and rail connectivity, besides huge urban markets and manpower resources.



CIDCO built a theatre with modern acoustics dedicated for stage performances in Vashi. Inaugurated on 13th May 1997, it was named after the pioneer of Marathi theatre Vishnudas Bhave, who staged the first drama 'Seeta Swayamwar' in 1843 and later earned the reputation as playwright, director and actor-singer. Constructed on 5472.50 sq. mt., it has the capacity of 1000 seats. The ground plush 3-floor structure has residential facility for artists.

CULTURAL CENTRE : CIDCO-constructed theater has made Vashi a bussing node.

The Railway Ministry sanctioned 8-station Thane-Turbhe-Nerul-Vashi corridor as well as Belapur-Panvel double line project in 1997. The latter was commissioned on 29th June 1998. The revenue strength of CIDCO fluctuated in the following four years. Despite the recession, the net surplus rose to ₹ 9,42,68,000 in 1997 from previous year's ₹ 8,55,70,000. In 1998, it still showed upward trend that touched ₹10,99,63,000 mark. However, the net profit slumped to ₹ 6,92,96,000 as on 31st March 1999.

Khairane Road-over Bridge was inaugurated and commissioned on 15th September 1999. Using open foundation, it was taken up for construction in January 1996. It crosses over Thane-Turbhe-Nerul/Vashi railway line. With approaches on Vashi and Thane ends, its total length is 1,276 metre. CIDCO bore total construction cost of ₹ 30 crore.

As CIDCO was going through the crisis period, Mr. Anil Kumar Lakhina took over the reins of CIDCO on 15th June 1999. He was bestowed with Padma Shri in 1986 for the administrative reform initiatives he took when he was the District Magistrate of Ahmednagar in 1983. He had introduced three reforms, i.e. renovation of citizen-clerk relationship, simplification of office procedure to make files and documents easily available and better working conditions and environment in the offices. He helped overcome the grievous economic conditions around.

CIDCO's endeavours in carving out a city suitable for every class and strata paid off in 1999 when population of Navi Mumbai touched 10,00,000 mark. This showed that people preferred Navi Mumbai as a better place to be relocated to[2].

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ADORNING CITY SQUARE : With the grandeur of the sculpture and grace posture, this statue of Chhatrapati Shivaji Maharaj at Vashi Junction is the main attraction of people.

CHAPTER VIII

THE TURNAROUND
(2000 to 2005)

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The Turnaround

~2000-2005~

To climb steep hills requires slow pace at first.
–William Shakespeare

MARKETING REVAMPED

The global recession during the period did not hinder the performance of CIDCO, instead helped it grow much mature. In 2000, population of Navi Mumbai was about 1.0 million, which was 25% of the holding capacity of population of Navi Mumbai. As CIDCO was sailing through rough weather, Mr. Lakhina set a plan of 'Vision 2005' and revamped marketing strategy during his tenure that lasted till 11th February 2003. He sensed the seriousness of the recession and its adverse impact on the Corporation. Making CIDCO capable to withstand the competition and sustain in the market, he chalked out a three-prong strategy to bring CIDCO safely to the port.[1]

This included on-time delivery to avoid cost escalation of projects and providing top quality aesthetics; beefing up marketing apparatus as well as image building of CIDCO and Navi Mumbai. His thrust was on initiating cost-cutting measures on one hand and garnering greater revenues.[2]

The 10 lakh sq. ft. ITC commercial complex at Belapur on the lines of Vashi IIP, eying the upcoming Info-tech sector got operational in January 2001. It was planned in 1999. The huge structure is a cynosure in the city by its distinct architecture. It is yet another growth centre with IT bigwigs opting to be here. Among them are: WIPRO Ltd., Lab India Instrument, State Bank of India, Shell Transource, Green Point Technology Solutions.

BRANDING NAVI MUMBAI

CIDCO for the first time in its history launched an advertising campaign 'Life Has a New Address' at the property exhibition held at Vashi between 30th November and 3rd December 2001 to create brand image of CIDCO and Navi Mumbai. An elaborate campaign was also taken up displaying banners at Dadar Railway Station.[3] It created positive atmosphere and mindset with a craving to relocate to Navi Mumbai.

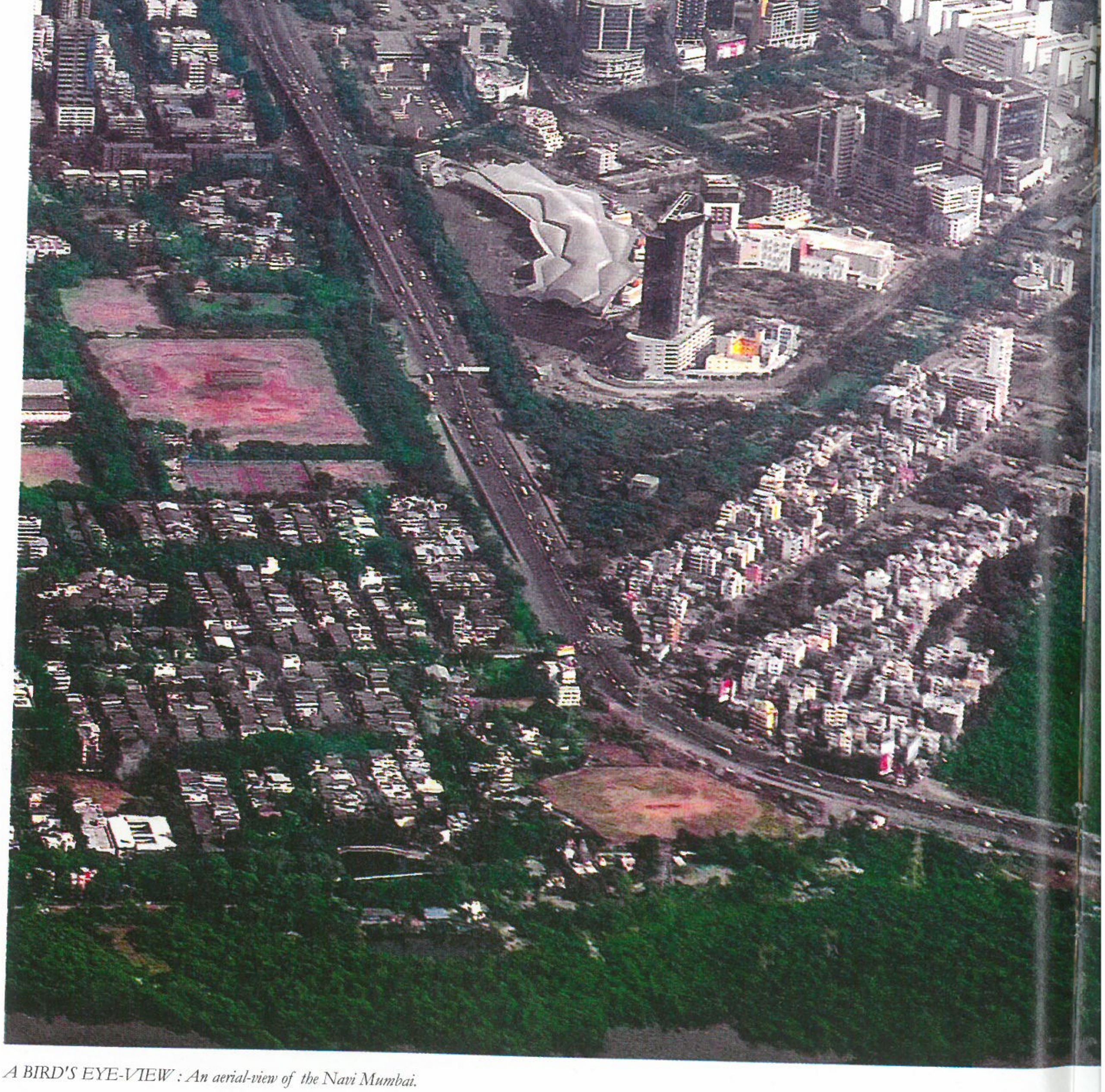
An ad agency was hired for the elaborate media campaigns and outsourcing of marketing efforts like tele-marketing, call centres, road shows and exhibitions, etc. It also implied strategic tie-ups with developers, builders and social institutions; encouraged performing employees through incentives. CIDCO also took special measures for relationship building with customers through continuous grievances redressal.

Cashing on the fervour, CIDCO offered the opportunity to have a house in Navi Mumbai through a scrupulous and innovative marketing scheme "5/3/2 per cent" for unsold housing stock and commercial premises. Announced on 22nd October 2001, the scheme allured people giving 5, 3 or 2 per cent rebate to buy unsold houses in Nerul and Sanpada. It fetched overwhelming response. The unsold stock of about 1300 ready-to-move-in houses located in Nerul, Sanpada, Ghansoli, Dronagiri, Kopar Khairane and Belapur ranging from 25 sq. mt. to 98 sq. mt. were made available on first-come-first-serve basis. The vacant premises in Belapur and Vashi infotech parks were also rented to IT giant Wipro. About 200 unsold apartments in Seawoods Complex were also bought by the Reliance Industries.

These integrated and focused efforts to increase revenues and curb expenditures resulted in ₹ 50 crore surplus budget in 2000-01. CIDCO generated cumulative cash reserves to the tune of ₹167 crore by March 2002. This helped it consolidate financial position and first time in 32 years, CIDCO managed all operations without external borrowings.

Budget 2000-03 focused on developing Navi Mumbai as a new tourist destination. The short-term plan envisaged development of Convention-cum-Exhibition Centre, Golf Course, Theme Parks and Cidcoseum, a museum of CIDCO showcasing the development of Navi Mumbai. Consolidated financial position facilitated CIDCO to initiate self-financing housing schemes for different strata of the society in the form of the 3,168-tenement low-cost housing designed by eminent architect Hafeez Contractor at Ghansoli, Sector 7 and the 3,236-tenement LIG/MIG Gharonda launched in Ghansoli, Sector 9.

ADORNING PARKING : Large forecourt area in front of Belapur Railway Station provides ample space for parking.

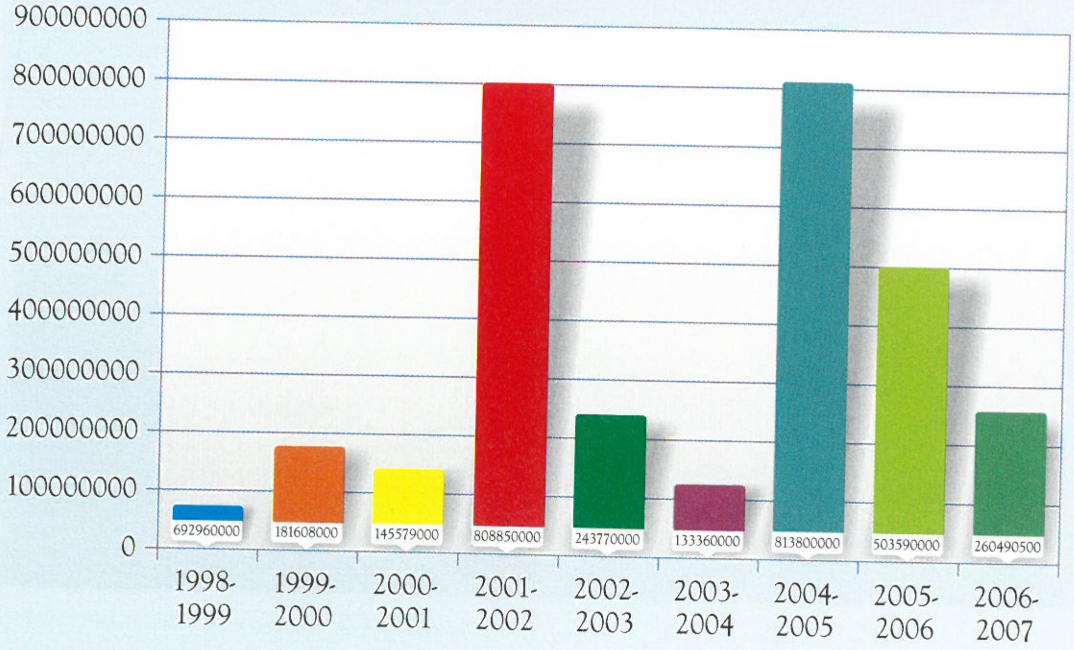


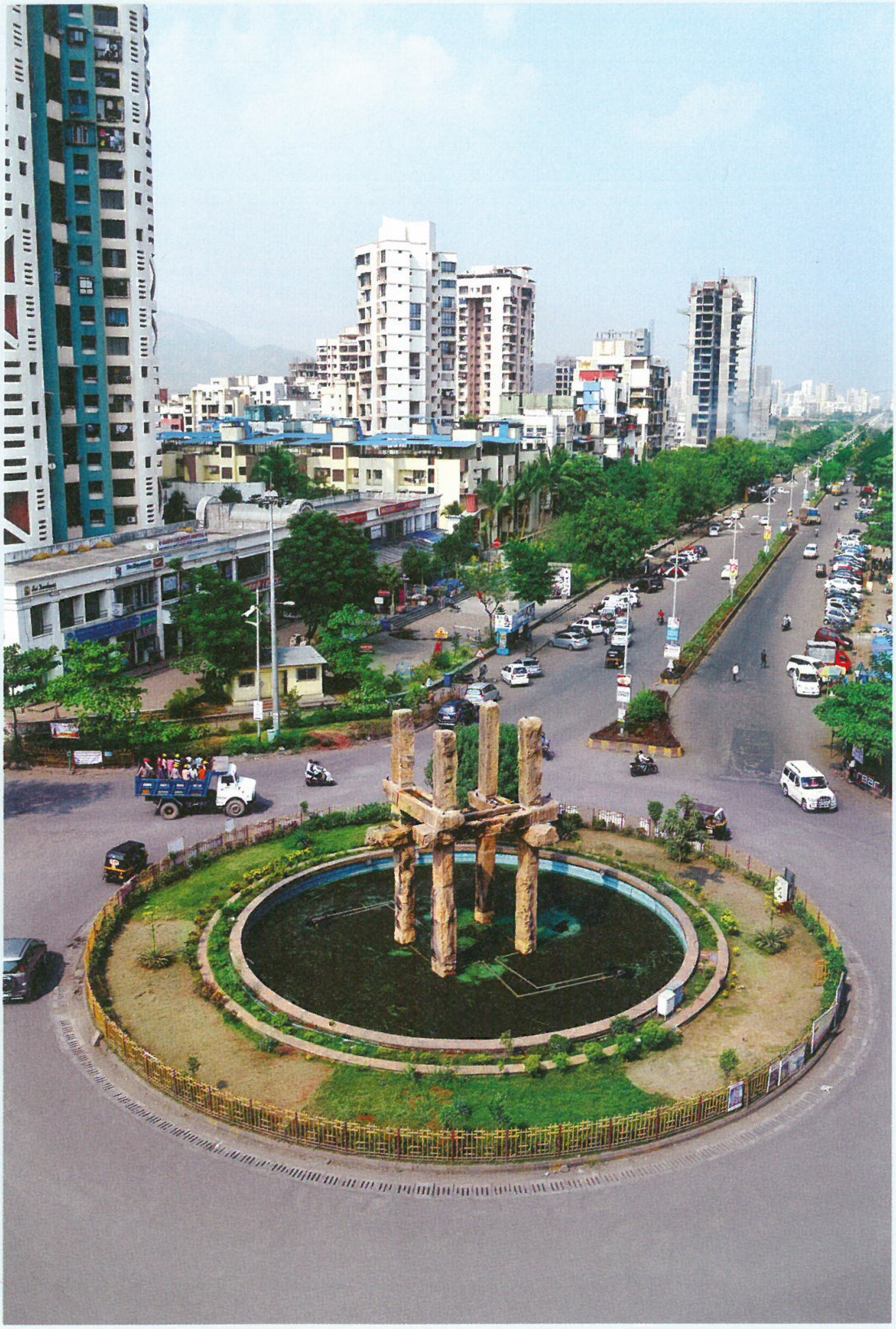
A BIRD'S EYE-VIEW : An aerial-view of the Navi Mumbai.

The first of its kind housing scheme fitted with cutting-edge technology facilities, the 1,356-apartment Millennium Towers, was launched on 26th March 2001. Located in Sanpada, the HIG housing complex was designed by renowned architect, S. K. Dass, that provided optic fibre backbone connectivity to each apartment facilitating modern security, internet, telephone, intercom and cable TV and therefore was branded as 'intelligent housing scheme'. System, Application and Product in data processing (SAP) was implemented in CIDCO in December 2002 to improve efficiency and transparency, making it the first State Government establishment to do so. It was developed by an IT giant WIPRO.

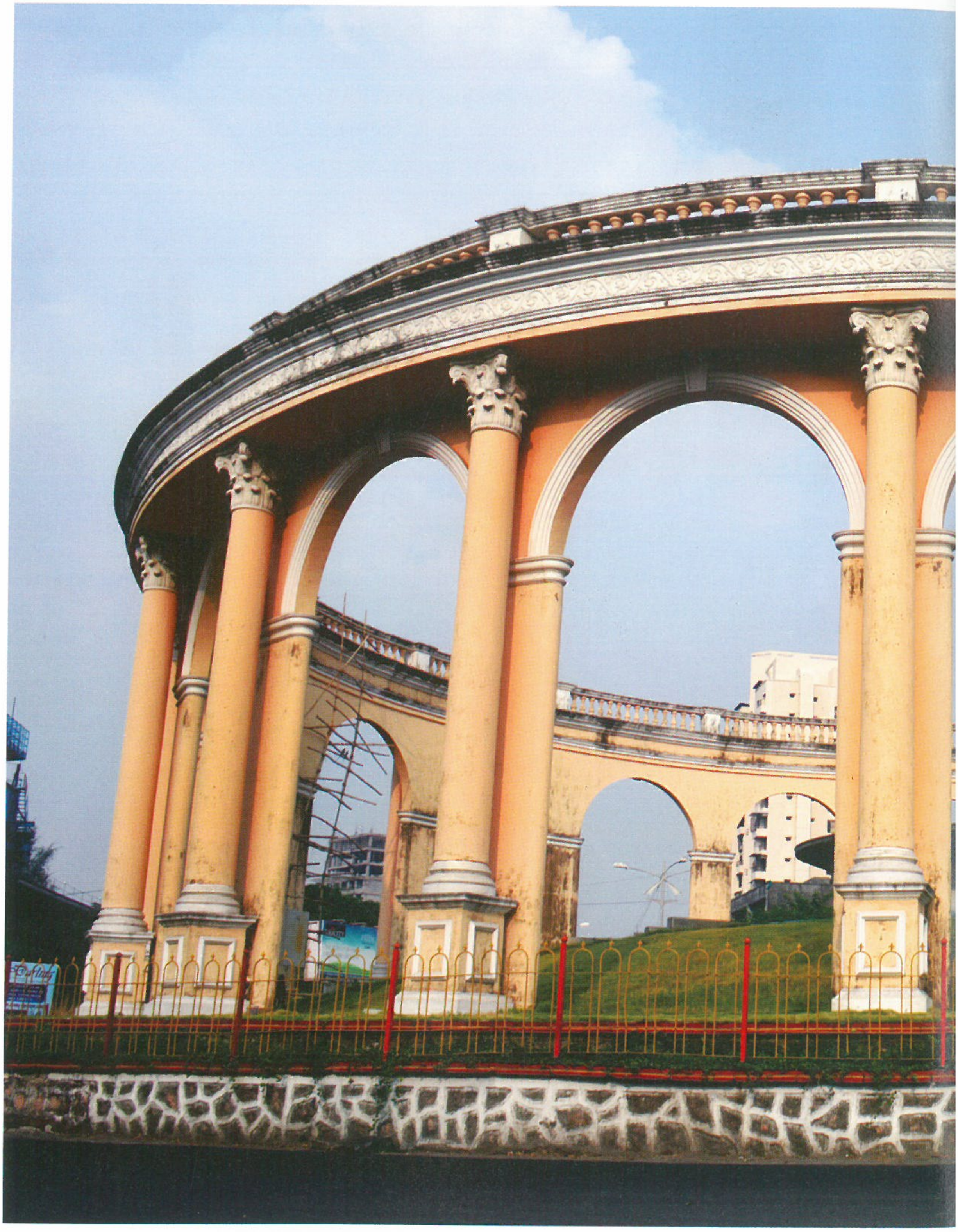
VISION 2005 RESULTS

CIDCO's 'Vision 2005' plan went on smoothly resulting in upward trend of revenues. 1999-2000 saw rise of ₹ 11 crore in revenues. In 2000-02, revenues were ₹ down by ₹ 4 crore from ₹ 18,16,08,000; in this year soared to ₹ 81,38,000 in 2004-05. The following year it touched ₹ 80,88,500 up by ₹ 66 crore. For two consecutive years as compared to previous year, revenues declined, however the upwards trend continued just reducing it by ₹ 56 and ₹ 11 crore respectively in 2002-03 and 2003-04. Year 2004-05 saw the highest revenue of ₹ 81,38,000 in six years going by ₹ 68 crore compared to the previous year. Revenues descended by ₹ 29 crore and ₹ 34 crore in 2005-06 and 2006-07 touching the mark of ₹ 5,03,59,000 and then to ₹ 2,60,49,500.





TRAFFIC ISLAND : The square in Sector 12, the 3.5-metre high structure made of yellow stone from Jaisalmeradorns Khaghar node with picturesque backdrop.



AN EVENING RENDEVOUZ : The Utsav Rotary built in Roman style with 50-metre radius stands on the Pravesh Marg and Pandav Marg junction is a perfect venue for the evening leisure.

उत्सव
चौक

Seawoods Railway Station, named after the nearest high-profile housing complex, was commissioned on 12th June 2004. This station was planned much later following the demand by the citizens from and around Darave village as there was a huge distance between Belapur and Nerul stations. Therefore later Darave word was added to the name and it became Seawoods-Darave.

Two large fountains in Kharghar node were inaugurated on 6th July 2004. The Utsav Rotary built in Roman style with 50 metre radius stands on the Pravesh Marg and Pandav Marg junction. It is made up of mixture of shining sand, white cement and glass fibre. Shilp, yet another cynosure at the Sector 12 adorns node with picturesque backdrop. The 3.5-metre high structure is made of yellow stone brought from Jaisalmer.

Following the overwhelming response to the Seawoods Estate Phase-I, CIDCO took up Phase II and the construction work started in May 2005.

The reputation as the premier town planning and infrastructure development company in the country fetched CIDCO an assignment of constructing the Meghalaya House at Vashi for the Meghalaya Government in the same year.

DURABLE ASSETS

With a view to creating durable assets to reap higher recurring revenues in the future, CIDCO completed important infrastructure projects. Amongst them, the major projects that got over in 2000 were Belapur-Panvel double-line which was commissioned on 14th April, Road-over Bridge at Mahape connecting MIDC – inaugurated on 15th May, Road-over Bridge over Belapur-Panvel railway line near Khandeshwar – commissioned on 25th July, underpass at Sion-Panvel Expressway fronting Sanpada Station commissioned on 13th November and 150 MLD Water Project at Hetwane, CIDCO's first water supply project taken up in 1993 got completed in 2000.

Having prioritised development of Mass Rapid Transportation mode to cater to the needs of rising commuters with sharing 67% cost, CIDCO awarded work orders for construction of Airoli, Ghansoli, Kopar Khairane and Turbhe Railway Stations on Thane-Vashi corridor in 2000. These stations are designed by renowned architects like Hafeez Contractor, Russi Khambatta and S. K. Dass. CIDCO's Departments of Railways and Transportation received an ISO 9002 Certification.

CIDCO spread out its wings and accepted invitation of the newly established Chhattisgarh Government in May 2001 as advisors for developing its capital city Naya Raipur. The Central Ministry of Commerce approved SEZ project comprising 4,377 hectares of Dronagiri and three sectors each from Kalamboli and Ulwe on 15th February 2002.

The 480-tenement Nivara project was launched in 2001 at New Panvel and houses were handed over in 2002. On 8th March 2002, the foundation stone was laid for the 240-tenement 'D' condominium of Gharkul, the LIG housing project. The 1,456-tenement MIG housing project 'Spaghetti' designed by Hafeez Contractor was launched on 13th July 2002. Its foundation stone was laid on 25th September 2002 for low-cost housing project for Mathadis.

CULTURAL IDENTITY

Mr. Lakhina expanded CIDCO's vision to create a cultural identity of Navi Mumbai after almost three decades of dedicated developing of city's physical infrastructure. This was the first time CIDCO did something going out of way to organise socio-cultural events. Initially CIDCO organized events involving school children and various cultural groups from Navi Mumbai which included plantation of saplings on mass scale, drawing competition etc. Vishnudas Bhave Auditorium hosted many events organized by CIDCO such as Musical and Theatrical performances by Navi Mumbai resident artists. Competitions like One-act play (Marathi) and Ghazal performances, Classical and Semi-Classical Concerts etc were organized to enrich and enhance the city's socio-cultural sphere. The first photography competition 'Frame-it-fine' for amateurs and professionals was announced on 29th August 2001.[4]

VERVE & CURVE : Planned and designed to break the monotony of straight vertical and horizontal look, the curve to the building row gave it the name Spaghetti.

A drawing competition for children of 5 to 7, 8 to 10 and 11 to 14 age groups was held at Belapur Railway Station Deck on 29th September 2002; around 8,000 children participated. In the second consecutive year 'Collage' was organised in August. Most of the schools participated. CIDCO provided drawing paper, water and snacks to all participants. Eminent judges selected the best entries in each age group. The first of its kind programme created a healthy competitive atmosphere and liking for art amongst the school children.

'Frame-it-fine' was organised in October 2003 again. On both occasions, CIDCO rewarded photographers with cash prizes. Independent panel of judges

Panoramic Spaghetti

selected three prizes, besides consolations in each category. This created a stock of good photographs which CIDCO later used in its marketing literature and advertising creatives.[5]

In 2004, CIDCO also organised some entertainment events at its cost. 'Megh Barse', the Marathi and Hindi rain-song musical soiree staged at the Bhave Natyagruha on 26th August 2004 was a treat for the Bollywood music aficionados. Professionals like Ravindra Sathe, Uttara Kelkar, Sanjivani Bhelande, Dr. Neha Rajpal, Suchitra Bhagwat, Shrikant Pargaonkar and Shrikant Narayan performed to enthral the audience.[6]

'Antarang' was staged by CIDCO employees. The aim was to encourage talents in the employees. Young and enthusiastic employees from different departments, including the technical staff had formed a group called CIDCO

Artists' Combine. Natya Spandan, a programme based on legacy of Marathi theatre and 'Aaina', based on Hindi film songs by professionals were received by audience with much zeal and zest. These cultural events created some vibrancy in the Navi Mumbai environment.

One-act play competition organised in January 2004 for amateur artiste groups was yet another attempt by CIDCO to bring the young actors, writers and directors on one platform. The competition was open for groups from Thane and Raigad districts. These contests created an atmosphere conducive for different art genres and gave confidence and self-esteem to the budding artiste.

SCULPTORS IN REFUGE

A fortnight of pleasing winter between 25th December 2004 and 20th January 2005 hit the headlines in the media as an inimitable, unmatched, strange yet unforgettable incident took place in Navi Mumbai. Some 15 sculptors had taken refuge under the aegis of CIDCO in Belapur. They were neither quarantined, nor put under house arrest. They were just engrossed in themselves and the creative task undertaken. People would watch them, sit near them and talk to them.

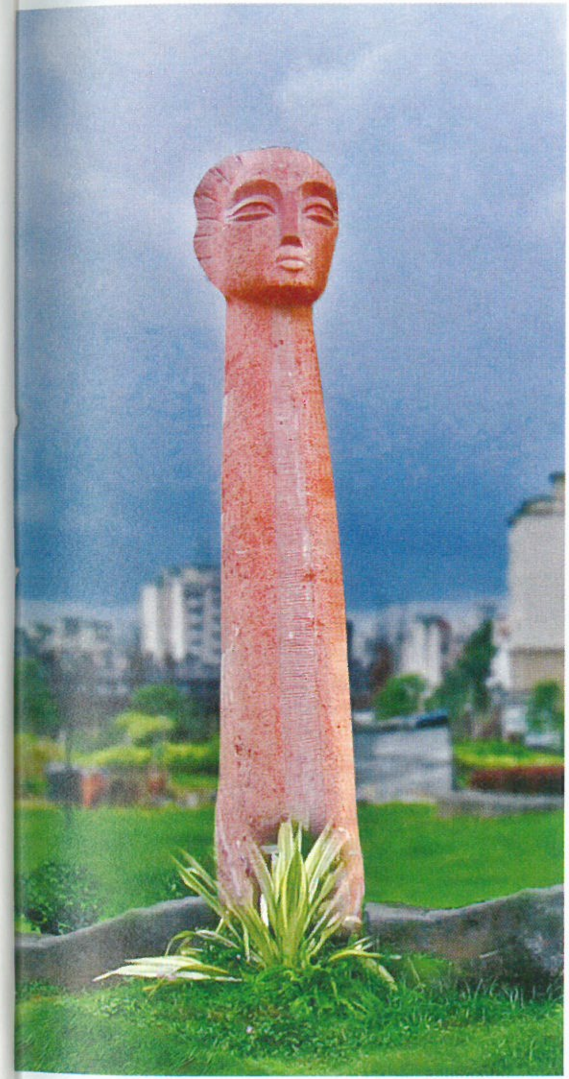
It was the 15-day workshop 'Shilpotsav' organised with a view to creating material heritage of Navi Mumbai. Reputed and amateur sculptors from different states of India - from Andaman Nicobar Island to Vizag, from Patna to Sindhudurg and from Kolhapur to Udaipur participated in it.The artists were given freedom of choice to showcase the development of the city from their perception. Lodging and boarding facilities, the material for their creation as per their choice were all taken care by CIDCO. A much serene place, a nursery in Belapur was offered to boost their moods and encourage creativity. The outcome was beautiful sculptures.

Professor Moreshwar Pawar, Head of the Sculpture Department of the J. J. School of Arts, coordinated the event. Prof. Pawar crafted 'Prosperity' depicting industrialization. He has used Black Basalt and Pink Sandstone. The other sculptures are: 'Journey on Paperboat' in Sandstone by Arun Pandit from Patna, 'Miss Navi Mumbai' in Pink Stone by Basudeb Biswas, a graduate of Shantiniketan's Vishwabharati from Andaman Nicobar Island now settled in Punjab, 'Motherland' by Bhupesh Kawadia, 'Binding' by Anand Prabhudesai, 'Evolution of City' by Najappa Pradhani, 'Reaching New Heights' by Ravishankar Patnaik, 'Growth' by Shailesh Shintre, 'The City' by Arti Terdalkar, 'Grace of Development' by Mukesh Mestri, 'Fusion Through Rhythm' by Makarand Deshpande, 'Growth' by Pankaj Tambe, 'Monsoon' by Pankaj Dhore, 'The Tree' by Vijay Kadam and 'Face of the City' by Santosh Dagre. These sculptures are adorning different parts of Navi Mumbai contributing to city's aesthetics

SUPER CITY

At the very inception of Navi Mumbai, CIDCO had envisioned a modern cosmopolitan habitat full of recreational facilities and open horizons for boundless boulevards to take Maharashtra forward in the new millennium. Branding of Navi Mumbai as 'the new address for comfortable living' did not make tall claims, it aimed at apprising people of the facts about Navi Mumbai.

Energetic environment, engines for eternal growth, emerging business magnet, innumerable prospects for better life, innovative storm-water management, a fine blend of tradition with modernism besides enormous green carpet are some of the attributes that make Navi Mumbai a global cosmopolis. No wonder the National Geographic Channel, known for its in-depth research, considered Navi Mumbai worth to be reckoned with as the super city in 2002. It was a great acknowledgement for CIDCO's painstaking endeavours. Prudent planners and architects of CIDCO deserve kudos for developing the super city.



MILSS NAVI MUMBAI : A sculpture in Pink Stone is a souvenir of the Shilpotsav, a unique initiative taken up by CIDCO.

By then for the 2 million citizens, Navi Mumbai had become the talent treasure and the ultimate pleasure with possibilities galore. IT sector that bloomed in the city opens several national and international avenues. Major centres of IT make it the Knowledge City, that itself forms a stretch of knowledge corridor that is extended up to Pune. All 14 nodes, equipped with easy-access public transport, world-class education, easily available healthcare facilities, uninterrupted electricity supply and abundant tap water are no less than cities by themselves.

The city is the perfect precinct to nurture the next generation with the best education facilities from pre-primary to graduation in different syllabi such as the SSC/HSC, CBSE and ICSE. The city provides higher education in different faculties from Engineering to Shipping; Fashion Technology to Computer Technology, Architecture to Management, besides degree colleges, D.Ed., B.Ed., Nursing, Medical, Dental, Ayurvedic and Homeopathic.

SOCIAL HARMONY

Co-existence of communities of different faiths brings social harmony and CIDCO boasts the perfect atmosphere for it. Plotting for the social facilities is done by the Planning Department keeping in mind the serenity of the surrounding, natural ambience and convenience in reaching out to the place. Allotment of plots on lease at reasonably low rate for social facilities such as religious places and education institutes is done as per the policy guidelines. The first social facility plot was allotted in 1977 to the Indian Education Society for school in Vashi, Sector 1. Each node has worship places for different faiths such as Mandir, Masjid, Gurudwara, Derasar, Buddha Vihar, etc. as per requirements of respective communities.

CARVING OUT THE NICHE : A sculptor depicts a face of development in the city.

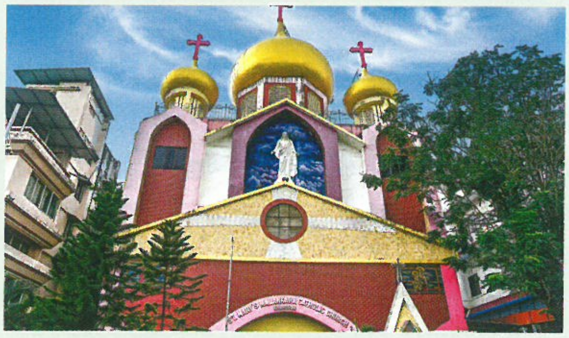
In Nerul, a small hill in Sector 22 embraces all Gods. A Church, Mata Amritanandamayi Math and three other temples exist here with perfect harmony. The environment offers the real spiritual experience. There is a Jain temple and a mosque in Sector 15, Lord Ayyappa temple is in Sector 17 and a Gurudwara in Sector 19. In Sector 11, Shaneshwar Seva Samiti has built Lord Shani temple. An old temple of the village deity exists in Sector 12 which is looked after by the Gramdevta Mandir Trust.

A Vitthal Mandir, built by Vitthal Rukmini Sarvajanik Trust exists in Ghansoli, Sector 30. Lord Vitthal is the most revered deity of Nath sect; the devotees who walk down to their most respected pilgrim at Pandharpur every year are also called Varkaris. The followers of the sect are in large number in Maharashtra. Millions of Varkaris throng the Vitthal Mandir of Pandharpur on Ashadhi Ekadashi, an auspicious day in Hindu Panchang (calendar) that is observed as fasting day. Since the Pandharpur

THE GRANDUER OF SOUTH : *A temple depicts the traditional architecture of the South India.*

THE GOLDEN TOMB : *A Gurudwara in Kharghar.*

CLASS OF ITS OWN : *A temple designed in a peculiar style and colour projects the grace.*



FOR THE SAKE OF THE LORD : *A Church with a different architecture style.*

Mandir holds a special significance for all Varkaris, Vitthal Mandirs are rare in other places. However, all these mandirs are bustled with the slogan chants of Jai Jai Vithoba Rakhamai. A small Vitthal-Rukmini temple has also been built in Sanpada in the compound of an old Lord Datta temple.

In Khanda village of New Panvel, an old temple that dates back to around 100 years is of Lord Shiva. The temple of Lord Shankar or Mahadev is known as Khandeshwar Temple. It is believed that an elderly villager discovered the Shivlinga near a village pond as he was sitting with others probably chatting on some local issues. He started removing the soil casually, found a hard stone and it turned out to be a 'pindi' of Lord Shankar. Then the area was excavated and a temple was found beneath the earth. Around the well-built temple, there is a well and a dormitory. It is located at 2 km from Panvel between Kalamboli and Panvel. Another Lord Shiva Temple is located in Airoli, Sector 3. Devotees of Mahadeva throng these temples on Mahashivratri.

The Ganesh Mandir owned by Siddhivinayak Mandir Vishwastha Mandal established in 1996 is situated in Airoli, Sector 5. On the North of Sanpada village, there is an old temple of Lord Datta. It is situated on a huge compound where there are temples of Lord Shani and Lord Hanuman. The Datta Mandir is regarded as the Jagrut Devasthan, the temple in which the God exists to fulfil devotees' vows. Padukas, a pair of footwear of Lord Datta are kept here.

There is a temple of Kalika Mata, an incarnation of Godess Durga in Kopar Khairane, Sector 9. In Ghansoli, Sector 2, there is a temple of Santoshi Mata, an incarnation of goddess of might and creation. It is owned by Shree Santoshi Mata Devalaya Trust. An old temple of Kali Mata also exists on the Parsik Hill in Belapur node.

An ancient temple of Mari Aai Mata, the village goddess of Juhugaon, exists in Vashi. Believed to have been built 300 years ago, it was renovated in 1992 for the first time, the second time it was renovated in 2001 and marble idols of Lord Ganesh, Shri Sainath and Swami Samarth were established therein. The festival of Navaratri is celebrated here with much zeal and zest.

A temple of Lord Ayyappa built by Shree Ayyappa Seva Sangham exists on the Parsik Hill in Belapur node amidst the picturesque background. The temple location gives a bird's eye view of the entire node. There is a very narrow path to reach the temple. The Ayyappa temple, constructed by Shree Ayyappa Seva Samaj, is seen in Kalamboli, Sector 6E.

Kalamboli is predominantly designed for commercial activities such as wholesale Iron and Steel Market, warehousing and truck terminal and is dominated by Sikh community. A large Gurudwara has been built in Sector 11 by Guru Nanak Sachkhand Sabha. Another Gurudwara has been built by Shree Guru Singh Sabha in Belapur node.

An oldest religious place in Vashi, ever since CIDCO started development, is a mosque in Sector 9A. It has been built by Noor Ul Islam Trust. Another masjid constructed by Dawood-Atba-e-Malak Vakil Trust exists in Sector 8. In Airoli, Sector 17 there is a mosque built by Airoli Masjid-e-Aqsa Trust. Khairul Islam Trust has built a mosque in Kalamboli, Sector 6E.

Vashi houses a huge church in Sector 8. Built in 1977-78, it stands on a plot admeasuring 2,000 sq. mt. There are three more churches in the node. The Archbishop of Bombay has constructed the one in Sector 9A on a 1500 sq. mt. plot. In sector 10A, there is a church constructed by Malankara Orthodox Community and another one built by Mar Thoma Syrian Community. Two churches are in Airoli, Sector 10 and 6. There is a church in Sanpada, Sector 7.

A Jain temple called Derasar, built by Shwetambar Murtipujak Jain Sangh exists in Sanpada, Sector 7. Derasars are built in marble and have very fine carving, because of which they become aesthetic marvels. They take years to be completed. There is a Derasar in Vashi also.

There are Buddha Vihars in Vashi, Airoli and other nodes. Buddhists brethrens gather here regularly and celebrate feasts like Buddha Purnima, Ambedkar Jayanti and Ambedkar Punyatithi. Buddhavandana is performed daily.

A centre for Vipassana, meditation based on Buddhist philosophy has been established on top of the Parsik Hill in Belapur node. It is one of the few such centres in Maharashtra established by Goenka Guruji.

TRANSIT-ORIENTED CITY

Navi Mumbai is the undisputed choice for people from all strata of the society. Navi Mumbai's road infrastructure is an apt answer to why the city is always on the move! The transportation network was planned to make it the transit-oriented city. The brain behind the transportation planning is Mr. Jha, then Transportation and Communications Chief Planner. It provides a functional hierarchy of road network system of city scale roads, i.e. Urban Expressway, Arterial Roads, Link Roads, Sub-Arterial and Local Roads.

Navi Mumbai transportation network boasts 650-km long road network; for the seamless travel CIDCO has also erected 8 large and 15 medium level bridges. In Mumbai, 52 flyovers were planned in 1996 and constructed between

1996 and 1999, but flyovers in Navi Mumbai were raised many years ago as back as 1980s, 5 major bridges, 17 flyovers and interchanges, and 15 Road-over Bridges, so the city is well connected. Prominent roads developed by CIDCO include the first expressway of Navi Mumbai – Palm Beach Marg, Pandav Marg, Amra Marg, Pravesh Marg and Morbi Marg.

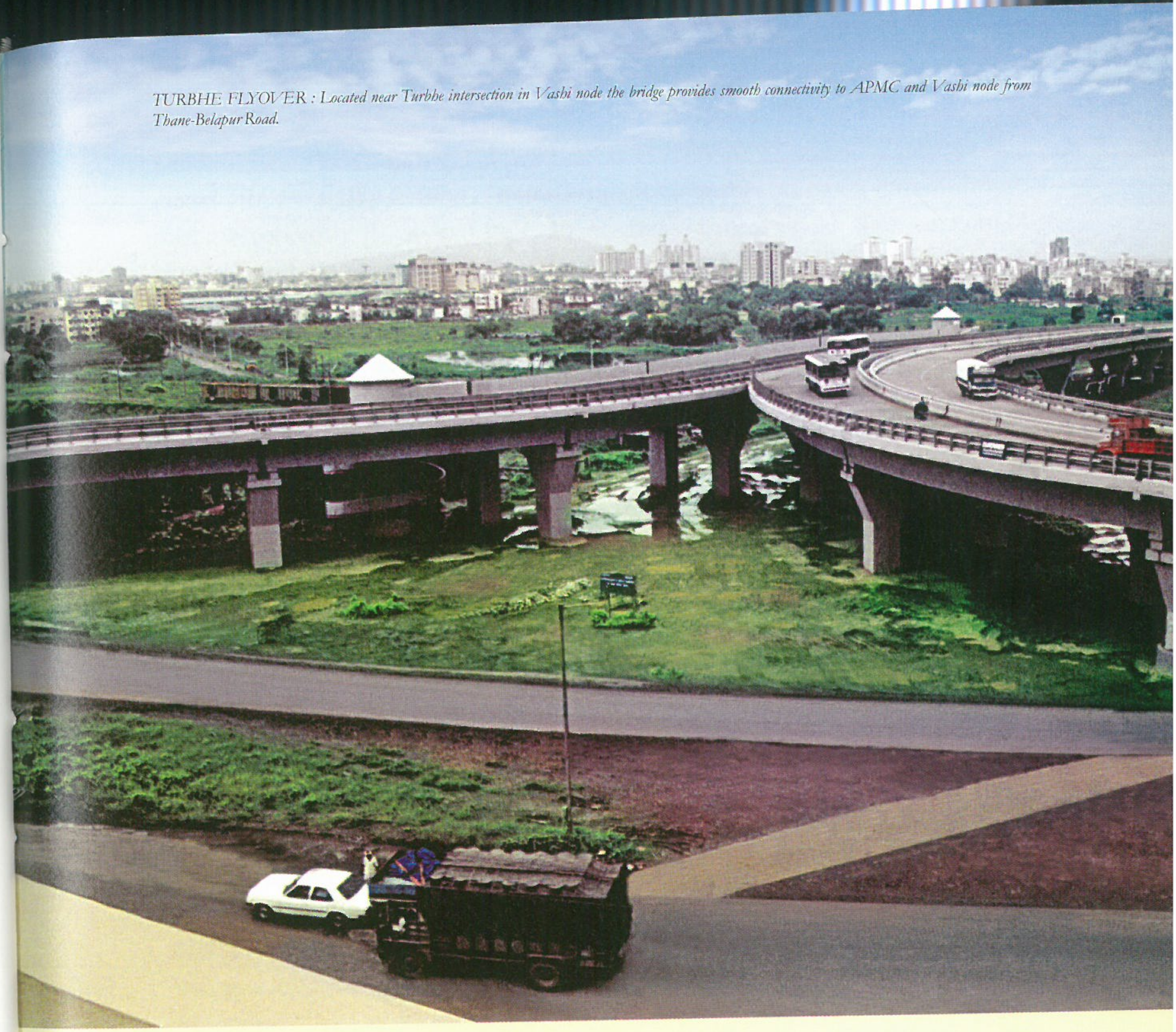
Following are major Road-over Bridges :

Mahape Road-over Bridge that crosses over Thane-Turbhe-Nerul or Vashi railway lines was inaugurated and commissioned on 15th May 2000. It connects Kopar Khairane and Ghansoli nodes on one side and Shil-Mahape Road leading to NH-4, Dombivali-Ambernath/Kalyan route and Thane-Belapur Road on the other side. Designed by M. S. Phiske and Associates, its constructions had started in January 1996. The ₹ 24 crore cost of the 725-mt is fully bore by CIDCO.

NH-4B Road-over Bridge located near Khandeshwar Railway Station was inaugurated and commissioned on 12th June 2000. It crosses Belapur-Panvel railway line with NH-4B link. It is designed by Shirish Patel and Associates Consultants Pvt. Ltd. Total construction cost is ₹ 14.50 crore. Funds for the bridge were made available by the Central Government under the 9th plan of Mega City Project. With the approaches on Kalamboli and Jawaharlal Nehru Port sides, its total length is 642.8 mt. Construction using open foundation had started in October 1998.

Belapur Road-over Bridge located near Agroli Village between Sector 21 and 22 of Belapur node, this bridge was inaugurated and commissioned on 13th November 2000. Constructed with open foundation, its length including approaches at Parsik Hill side and Uran side is 635 mt. It is situated at the crossing of railway line on road connecting Belapur East with West. Designed by Shrikhande Consultancy Pvt. Ltd., its total cost of ₹ 18.61 crore is incurred by CIDCO. Construction of the bridge had started in February 1994.

The state-of-the-art coastal expressway, hailed as the Queen's Necklace of Navi Mumbai, Palm Beach Marg was commissioned on 9th February 2001. The 8-km Vashi-CBD arterial road has 6 lanes, three lanes on both sides, divided by Royal Palms in the centre that is flanked by flowering shrubs. The internal expressway connects Belapur to Vashi and onwards to Kopar Khairane and Ghansoli to be extended till Airoli. The 4.5-km Pandav Marg, 8-km Amra Marg Pravesh Marg and Morbi Marg were renovated and strengthened in 2001. Vijay Marg and Matheran Marg in Panvel were completed in the same year.



TURBHE FLYOVER : Located near Turbhe intersection in Vashi node the bridge provides smooth connectivity to APMC and Vashi node from Thane-Belapur Road.

Vashi Road-over Bridge that flies over Mankhurd-Belapur and Thane-Turbhe Vashi railway lines was commissioned on 9th February 2001. It was constructed on running railway lines with least disturbance to running trains. Located near Vashi station, it is a semi-clover leaf junction. The clove-leaf is first of its kind in Mumbai and Navi Mumbai area. One arm of the clover leaf crosses a big nallah at the edge of Sector 17, Vashi, while the other joins the Palm Beach Marg on Mumbai-Pune Highway and Vashi Railway Station approach. Located at 9.02 km from Mankhurd Station, its total length including two approaches on Vashi and Uran sides is 745.43 mt. Designed by Gilcon Project Services Limited, its construction started in June 1995 using pile foundation. The total cost to the tune of ₹ 39.35 crores is bore by CIDCO.

Turbhe-Vashi Road-over Bridge is strategically located near Turbhe intersection in Sector 21 of Vashi node and was inaugurated and commissioned on 8th March 2002. It is close to Thane-Belapur Industrial Belt, APMC Janata Market as well as Section 21 and 23 of Vashi node. It provides smooth connectivity to APMC and Vashi node from Thane-Belapur Road. It is designed by CFS (I) Limited. Using open foundation, the 847-mt bridge was started in May 1998. CIDCO has bore the total construction cost of ₹20.50 crore.

EVER-GREEN CARPET

CIDCO's dedicated efforts made Navi Mumbai the most eco-friendly city with nearly 58% of the land reserved as an open area for parks, garden, forest and non-development zones that retain the natural aesthetics. The city is constituted of a hill portion from Uran, Belapur to Kalwa covering an area of about 21 km. This hill area is located on the East, adjoining Thane-Belapur industrial belt. On the South, it is spread from Ulwe to Gavan and Jasai villages. CIDCO has undertaken a massive afforestation on these hills.

The land under the high-tension power transmission cables has been utilised for creating and maintaining greenery, thereby preventing unauthorized construction of hutments. In all, 891 hectares of such land available in Navi Mumbai is being fenced and notionally subdivided into about one hectare strips to allot them on demand. The lands are being given on license for the purpose of nurseries, vegetable/flower farming, or for plantation of medicinal shrubs and plants.

A unique project called 'Smritivan' was launched in 1991 to protect about 85,000 sq. mt. area under high-tension transmission lines.1 Under the project, 1 to 5 hectare land could be adopted by a person for herbal and horticulture activities in memory of someone near and dear or by an institute as a CSR activity.

AMRA MARG : The flyover parallel to Panvel Creek Bridge connects Belapur to Uran.

CIDCO would maintain the saplings planted by the people in the Smritivan. This created environment conscience among the citizens and widened the green cover in the city.

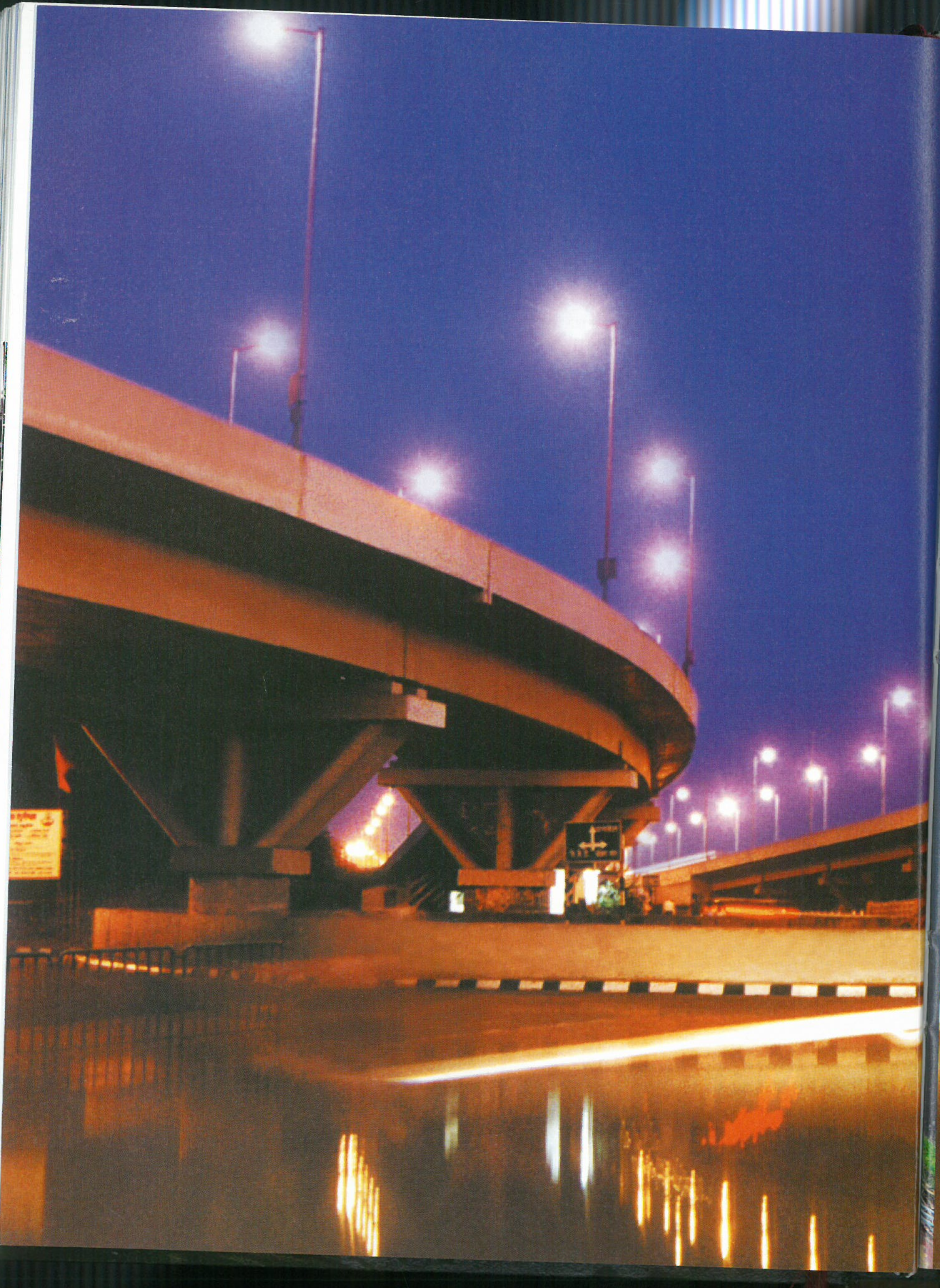
Six nurseries at Sanpada, Vashi, CBD Belapur, Kharghar, Kalamboli and Panvel provide saplings for planting trees in open spaces and along roadside. In all, 175 public gardens have been developed covering 6.5 lakh sq. mt. area. A regional park at Nhava in Sector 23 with 25,000 trees and Diamond Garden in Kharghar, Sector 12 also add to the green cover. The Horticulture Department's initiatives helped plant about 5 lakh saplings and carry out afforestation on about 500 hectares till 1995.

SCENIC BEAUTY

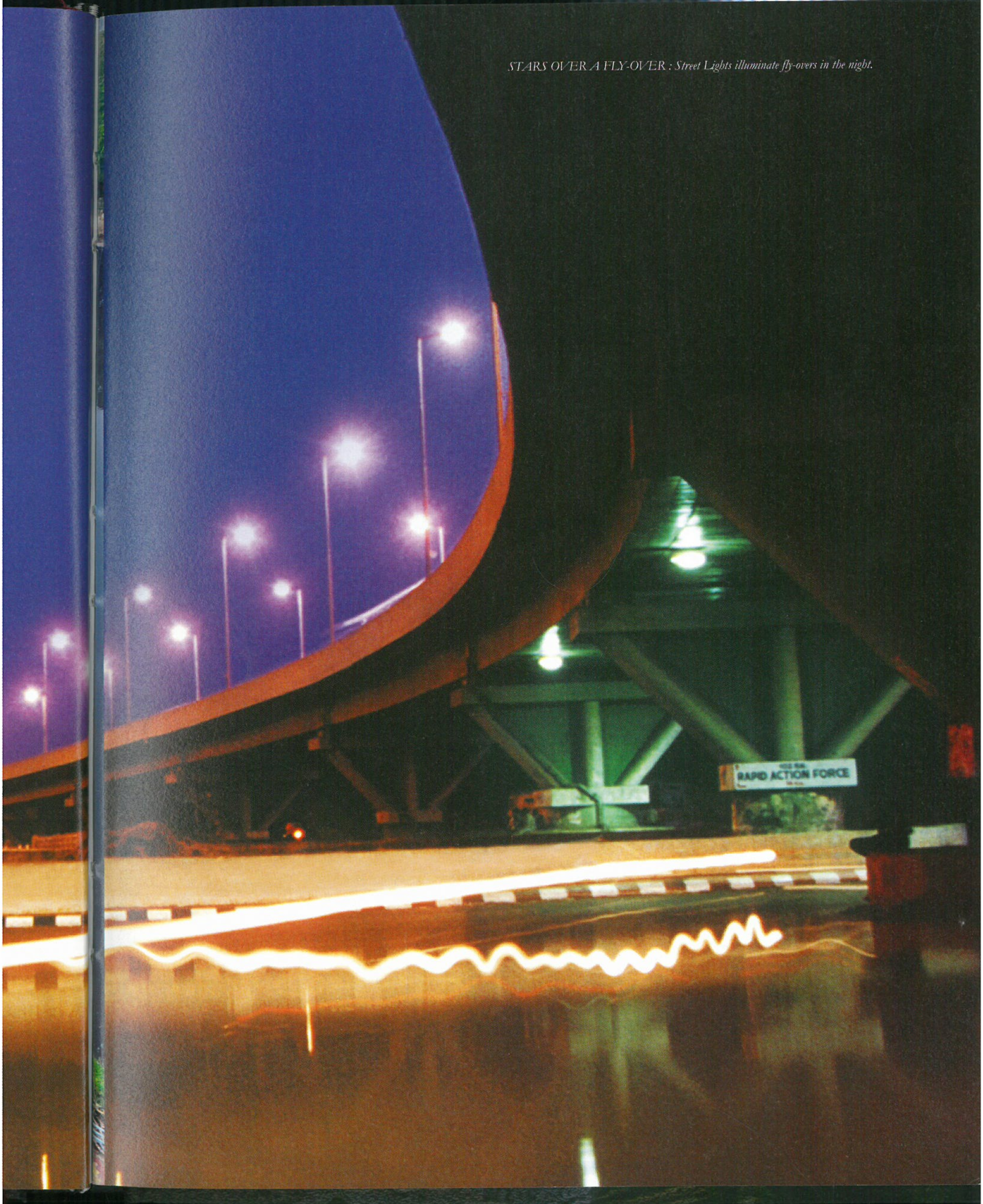
Major land parcels above 30 mt. contours have been retained as Regional Greens and earmarked as Regional Park Zones (RPZ), with minimal development interventions. Out of the total area of NM, 20% is under RPZs (69 sq. km.). Nature Park is the largest of these RPZs, spread over 2,000 Ha. (20 sq. km.). Most of the lands under Regional Park Zones are undulated and under the legal status of 'forest'. A variety of flora and fauna are found here.

Located on the North-East of Mumbai city, Nature Park is a part of the

THE PALM BEACH MARG : The 6-lane state-of-the-art coastal expressway, hailed as the Queen's Necklace of Navi Mumbai.



STARS OVER A FLY-OVER : Street Lights illuminate fly-overs in the night.



moist deciduous forests of the North-Western Ghats. The ghats descend steeply to the coastal plains on the West but merge rather gently through a series of hills on the Deccan Plateau in the East. In the middle of the urbanized and developed nodal areas of Nerul, Belapur and Kharghar it provided spectacular views and the creek beyond. There are several hills which run North to South spreading over 8.5 km in a stretch. The general topography of the area is undulating. The valley consists of dense semi-evergreen and moist deciduous type of vegetation.

The Nature Park is divided into six varied habitats such as Parsik Hills, Valley Park, Artists' Village, Bharati Vidyapeeth, Kharghar Hills, Kharghar Plateau, including Owe Dam. Parsik Hills form the smallest area of the Nature Park measuring 15 hectares and the only hill separated from the others by the NH-4. It is primarily a residential area developed on hilltop. Most of the existing vegetation here is of exotic plants, a classic example of urban biodiversity.[7]

The area is envisaged to have viewing galleries, trekking routes, camping sites and suitable areas for sports activities like mountaineering, rappelling, flying fox, rope activities and bicycling & dirt biking routes. 2 For all developable non-forest areas, specific family-oriented activities from moderate-to-high intensity sports are proposed which will be accessed through forest trails. Some activity hubs have been identified and conceptualized, like the Owe dam hub, the quarry areas, Pandavkada catchment area and introducing nature sport activities.

VIEW FROM THE HILL : A glimpse of greenery and the development Kharghar from the Kharghar hill top.

FLORA-N-FAUNA TREASURE

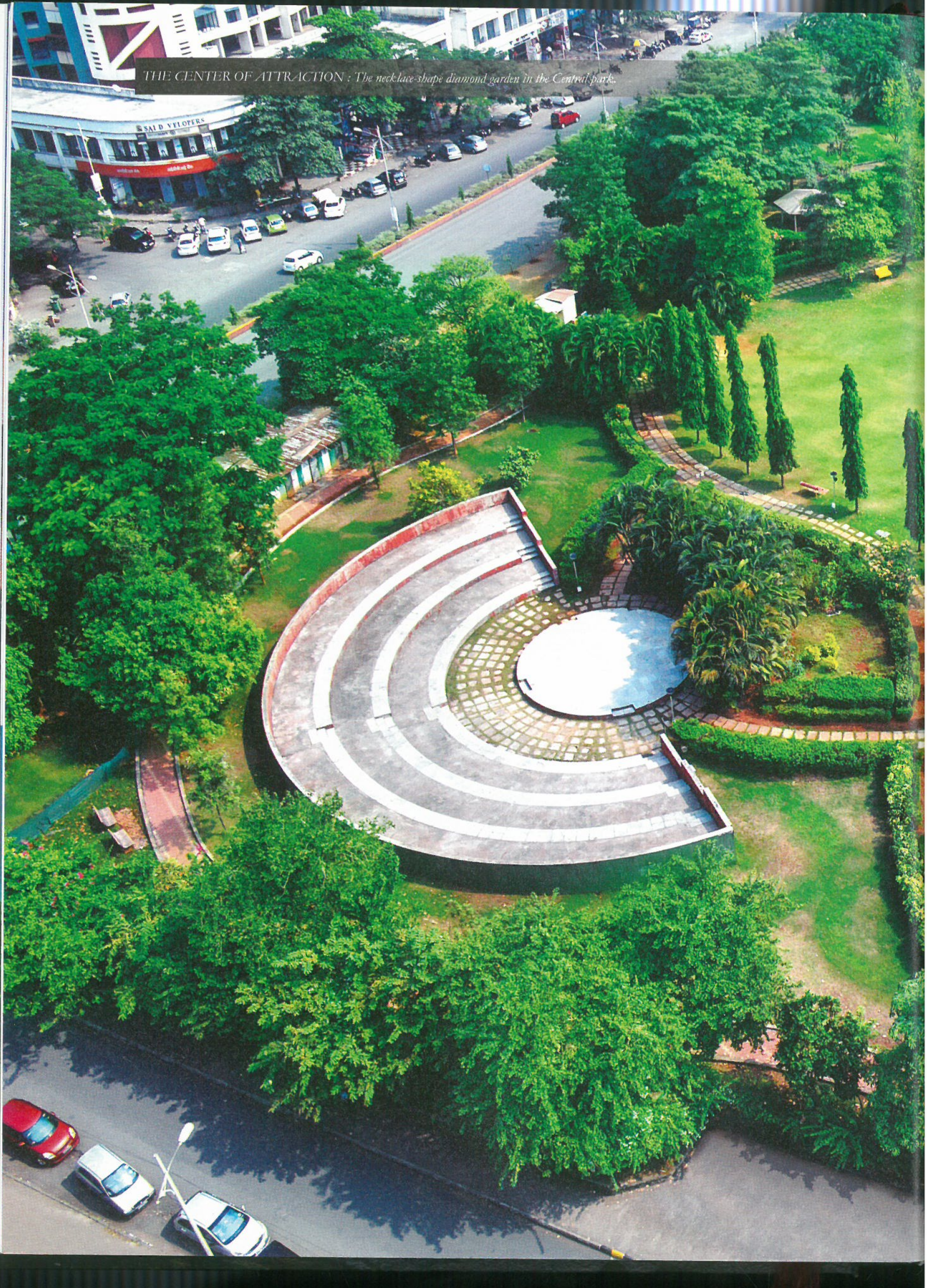
The Bombay Natural History Society carried out a survey in 2007 on the request of CIDCO to support the initiative. The survey discovered that the six pockets of Nature Park are rich in flora and fauna. Altogether 239 plant species, 295 insect species, 15 other invertebrates, 12 fishes, 9 amphibians, 28 reptiles, 179 birds and 12 mammals' species were recorded here.

The area also houses some endangered varieties like Ceropegia Vincaefolia, Gloriosa Superba, and Dalbergia Horrida. There are about 17,500 flowering species in India and about 3,228 species in Maharashtra. A total of 487 flowering and non-flowering species were recorded in the Nature Park.

The plant species such as Raintree, Ashoka, Neem, Gulmohur, Eucalyptus, Cassia, Casuarina, Bottlebrush, Spathodea (fountain tree), Silver Oak, August (Sesbania), Teak, Sagargota, Wine Palm, Betel Nut, Coconut Fan Palm, Water Palm, Date Palm, Oak, Sesbania, etc. add to the natural beauty.

The 200-hectare Kharghar Hills is the third largest area and ranks third in biodiversity richness. The hilly region has deep and shallow valleys. Bharati Vidyapeeth is in 25-hectare barren area next to the Kharghar Hills. There is a small water body which dries up in summer and has some slums around it, therefore it is devoid of vegetation and has lowest biodiversity.

The 1,420-ha Kharghar Plateau, including Owe Dam, the largest among all the pockets, is extensively hilly terrain with no access road. It extends from



THE CENTER OF ATTRACTION : *The necklace-shape diamond garden in the Central park.*

Kharghar Hills and opens up on the barren plateau with deep cliffs. Pandavkada waterfalls, mostly active in the monsoon, is a popular tourist destination in the area. The Owe Dam built at the base of the foothill supports good bird and plant life.

Alarmingly, as per the IUCN red list (2008), two of the bird species of the Nature Park are threatened globally. The Greater Spotted Eagle (Aquila Clanga) is listed as 'Vulnerable' and the Pallid Harrier (Circus Macrourus) as 'near threatened'. Presence of these species makes the area highly important and necessitates protection of its biodiversity.

Of the 179 bird species found in the Nature Park, 51% are resident birds, 28% are migratory, 7% are local migrants, 3% are passage migrants and the status of the remaining 11% species is unknown. Also, seven of these species are endemic to India and not found elsewhere in the world.[8] One of them being endemic only to the North-Western Ghats, namely the Vigors' Sunbird, is found in Valley Park, Artists' Village and some areas of the Kharghar Hills. Some of these birds that have found their permanent habitat in the nearby Karnala Birds Sanctuary are frequenting the area. The sanctuary is just 30 km from the city.

Some of these birds are White Wagtail, Large-pied Wagtail, Thick-billed flowerpecker, Purple Sunbird, White-eye, Red vented Bulbul, Grey Shrike, Bay-backed Shrike, King Crow, Maina, Crow Pheasant, Barn Owl, Jungle Owlet, Spotted Owlet, Palm Swift, Blue Rock Pigeon, Indian Ring Dove, Indian Kestrel, Grey Partridge, Grey Quail, Pond Heron, Cattle Egret, Little Egret, Black-winged Kite, Pariah Kite, Indian White-beaked Vulture, Long-billed Vulture, Red-Wattled Lapwing, Sandpiper, White-breasted Kingfisher, Chestnut-headed bee-eater, Blue Jay, Small Green Barbet, Rufous-tailed Finch-Lark, Bombay Babbler, Tickell's Blue Fly catcher, Franklin's Wren Warbler, Ashy Wren Warbler, Tickell's Leaf Warbler, Magpie Robin, etc.

Among the butterflies, the Plain Orange Tip is exclusively found in Navi Mumbai and not recorded from the rest of Mumbai. The number of butterflies found in Sanjay Gandhi National Park is 140 and a record of 101 species from the Nature Park alone is an indication that a healthy ecosystem thrives inside the Nature Park. In all, 76 butterfly species were recorded from Artists' Village due to the availability of water sources resulting in mud-puddling sites. The Goat Moth was spotted on the light trap at Valley Park by BNHS researchers in 2007 after over a decade in the vicinity of Mumbai.[9]

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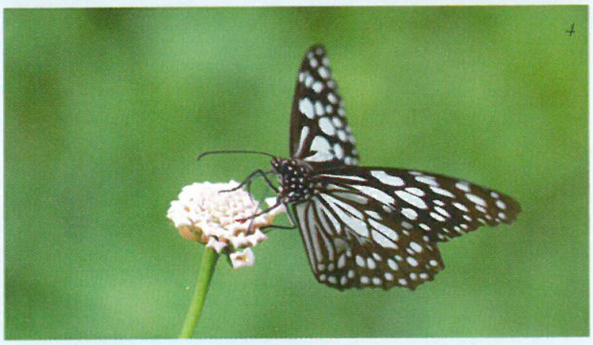

BIRDS' NAMES : *1) Leaf Bird 2) Kingfisher (Oriental Drawft) 3) Asian Koel (Female) 4) Butterfly 5) Coppersmith barbet*

SURRENDER TO SERENITY : A temple at the Parsik hill top.

CHAPTER

IX

NO TURNING BACK

(2006 to 2012))

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Changed Population Trend 181

No Turning Back

~ 2006-2012 ~

Believe you can and you are half way there.
–Theodore Roosevelt

INVESTING SURPLUS

CIDCO proved its mettle by successfully tiding over the global economic crisis, transforming deficit into gain, difficulty into opportunity, blight into bliss and blight into boon. With the knack of bringing in all odds in its favour and sustaining in any adverse condition, the CIDCO never turned back from this juncture. It held its head high living up to its reputation. Though registered as the company, its mission is to plan and create environment-friendly, model urban settlements with full-fledged physical and social infrastructure to meet residential, commercial and industrial needs of population at present and in the years to come.

CIDCO pumped in the surplus earned through 'Vision 2005' in projects such as rail corridors, metro railway, housing schemes. This reflected fluctuations in budgets. Budgets of two consecutive years of 2005-06 and 2006-07 showed deficit; the third year the company rose again and gained some surplus. In 2008-09, it again slumped.

CIDCO invested surplus in future projects of infrastructure development. As on March 2009, Navi Mumbai's total expenditure was about ₹ 11,000 crore whereas receipts about ₹ 14,000 crore. While the total expenditure on housing was ₹ 1,856 crore, the receipts were ₹ 1,956 crore, ₹ 4,156 crore from sale of plots; ₹ 1,036 crore from commercial complexes and ₹ 258 crore from social plots.[1]

On 5 June 2006, CIDCO inaugurated the Valley Park and announced the development of a Nature Park spread over 2,000 hectares. The main objective behind development of Nature Park is to ensure protection of environment, specially the hill slopes. It will provide a rich natural environment to the urban population in the region. On 12th June 2006, Kharghar station was inaugurated. Kalwa-Turbhe-Juinagar-Nerul corridor work was undertaken in the year.

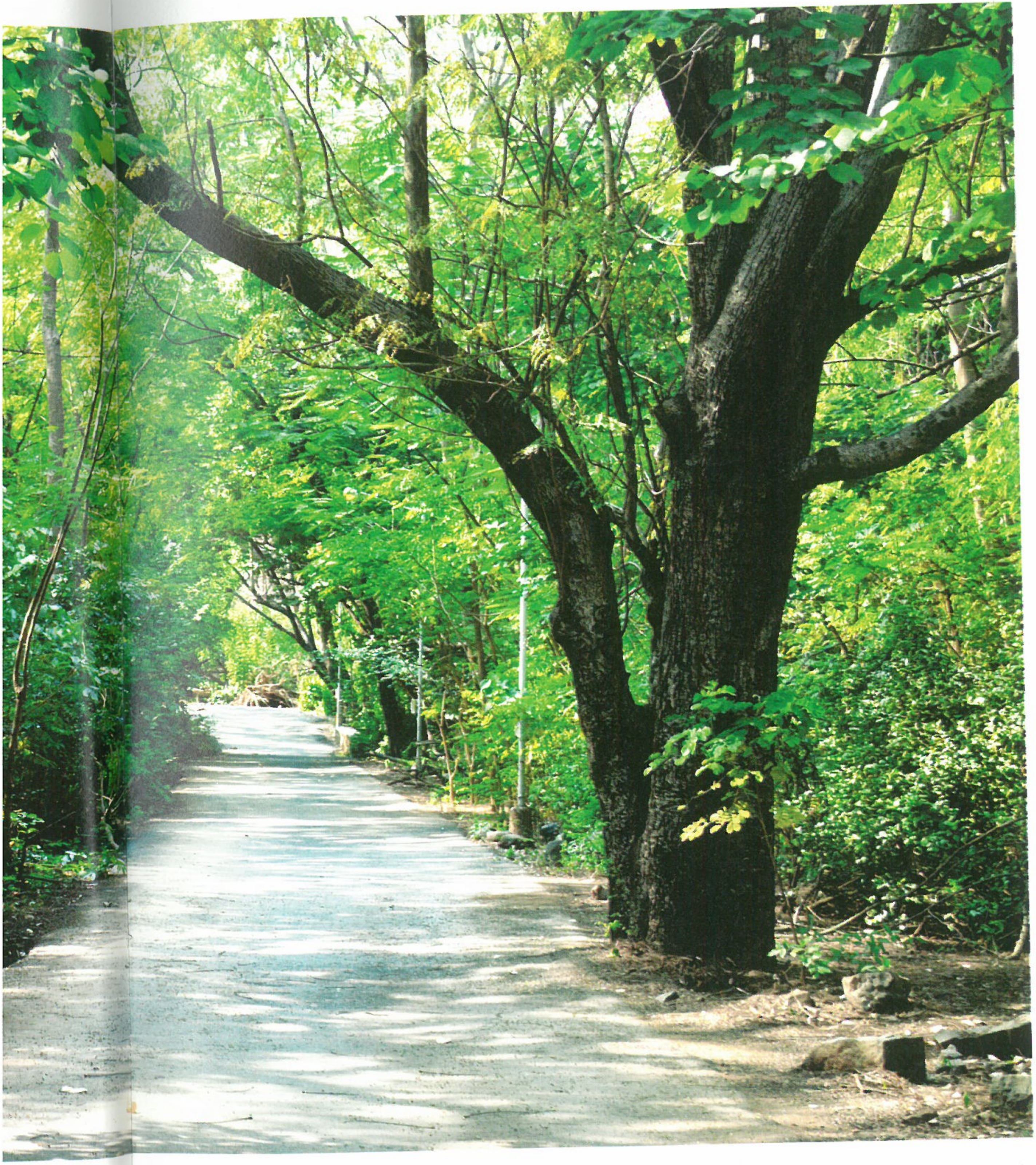
GREENFIELD AIRPORT

The International Civil Aviation Organization (ICAO) conducted Simulation Study on interoperability of exiting Mumbai's Chhatrapati Shivaji International Airport (CSIA) and the proposed Navi Mumbai International Airport in single airspace in 2006 and Project Feasibility and Business Plan Report in 2007. The Central Ministry of Civil Aviation (MoCA) approved 'in principle' a Greenfield Airport in Navi Mumbai on 6th July 2007. It constituted Steering Committee to oversee the structure and implementation of Navi Mumbai International Airport.

In the meantime, the MoCA Committee appointed in November 1997 to examine a site for a second airport in the MMR, recommended in June 2000 the Rewas-Mandwa site for the new airport with only one runway. The panel was later reconstituted with the State Government nominating the secretary for Industries and Managing Director of CIDCO, Mr. Sinha on the committee. CIDCO then took the initiative and revised its proposal by accommodating a second runway as per the norms of International Civil Aviation Organisation (ICAO), as well as carried out the SWOT analysis and made a presentation to the State Government on 16th September 2000 in a meeting attended by the senior officials of the MoCA and Airports Authority of India.

MoCA panel identified two more locations – Navi Mumbai and Mhapan at Sindhudurg district besides Revas-Mandwa and suggested another alternative of expanding the Mumbai Airport. The Committee evaluated all new sites and

GREEN VALLEY : *The foot-hill of Parsik reserved to preserve the green cover.*



submitted its report in June 2000. Navi Mumbai site was considered technically and financially viable, environmentally less disturbing and supported by the local people. The State Government forwarded CIDCO's Navi Mumbai Airport proposal to the MoCA, as the second airport for Mumbai. Airports Authority of India constituted a sub-committee which examined the proposal and concluded that Navi Mumbai site was technically and operationally feasible and suggested to conduct Techno-Economic Feasibility Study.

CIDCO pursued the matter and carried out One Dimension Mathematical (Hydraulic) Model Study in 2000 through Central Water Power Research Station (CWPRS) to assess the technical feasibility of training of Gadhi River and diversion of Ulwe River as well as flood and flow condition in Panvel Creek in wake of the construction of airport. The study concluded that the construction of airport by training of Gadhi River and diversion of Ulwe River is feasible and the flood level in Panvel Creek and rivers, i.e. Taloja, Kasadi Gadhi, Kalundre and Ulwe would remain unchanged with slight relief in upper reach of Gadhi and Kalundre.

The report inferred that the construction of airport will not result in any flood to adjoining area of Panvel, Kalamboli, Kamothe, Kharghar and Belapur. As part of Techno-Economic Feasibility study, CIDCO then carried out vital studies such as Traffic Review and Forecast, Mumbai Airport Saturation, Navi Mumbai Traffic Forecast, Navi Mumbai Land Access, Airport Layout Plan and Facilities, Aeronautical, Environment, Geological Hydraulic Study, Geo-Technical Analysis as well as the Project Cost and Financial Analysis.

The State Government forwarded the reports to the MoCA in 2001, recommending the Navi Mumbai site for development of the second airport for Mumbai. On 5th December 2003, the State Urban Development Department reverted on CIDCO's 1997 proposal with some queries, one of them regarding the ownership of the airport land. CIDCO replied with the information that major portion of the airport land is in CIDCO's possession and it required a small chunk of land that is owned by villagers.

CIDCO Board of Directors approved the proposal on 17th August 2007 for the development of Navi Mumbai International Airport in accordance with the 'in-principle' approval of MoCA. Subsequently, the State Government also approved the airport proposed in Navi Mumbai on 30th July 2008 and appointed CIDCO as Nodal Agency for implementing the project.

CIDCO planned India's largest Greenfield Airport over 1,160 hectares with the ultimate capacity of 60 MPPA (Million Passengers per Annum) to be developed through private-public participation (PPP) on the norms of Design-Build-Finance-Operate-Transfer (DBFOT) pattern.

With the first phase of the airport mandated for a passenger capacity of 10 MPPA including cargo, it was to have total 479,000 aircraft operations per annum. Its peak hour movement was projected to be 78 aircraft and peak hour passengers projected to be 13,300. The basic cost of airport project was estimated to be around ₹ 16,000 crores spread over four phases, including cost of pre-development works. Phase-I of the Airport was expected to be commissioned by 2017.

With a 10-lane approach road to its terminal building flanked by its two runways, the airport will have two 3,700-metre long parallel runways of 60 metre width. The runways will be spaced 1,550 metres apart as against the ICAO norms of minimum 1,090 metres space for simultaneous and independent operations, along with rapid exit taxiways. The runways will be connected to the apron by taxiways with the approach road to the terminal. The airfield is designed to accommodate new large aircraft like A380/B747-8 and complies with ICAO Aerodrome Code 4F.

Mr. G. S. Gill took over on 31st July 2007 as new MD and continued till 31st March 2010. It was in his tenure, the mega event of Navi Mumbai Festival was organised. The initiative for the social cause of enriching Navi Mumbai culturally was masterly organized for two consecutive years and reflected national integrity.

CIDCO signed an accord with Larsen and Toubro on 21st April 2008 for the development of Seawoods Railway Station Complex as it was the only station on the Vashi-Belapur corridor without the station complex. The station was not planned along with other stations on the line owing to the pressure of the local residents. Therefore, CIDCO invited bids for the project and the L&T bagged the deal.

NAVI MUMBAI METRO RAIL

Navi Mumbai Metro (NMM) is planned to provide inter-nodal connectivity and feeder to the existing suburban rail network. Having taken the review of the transportation needs, CIDCO decided to add Metro Railway to the city's physical infrastructure to cater to the fast-growing population. The present Mass Rapid Transit System, the harbour railway line cannot reach out to more people due to stricter norms of the Railway Ministry that are mandatory. Metro Railway provided the better alternative. The other advantages it has are: less air

BEGINNING FROM THE ZERO : *Hill cutting at the airport site.*

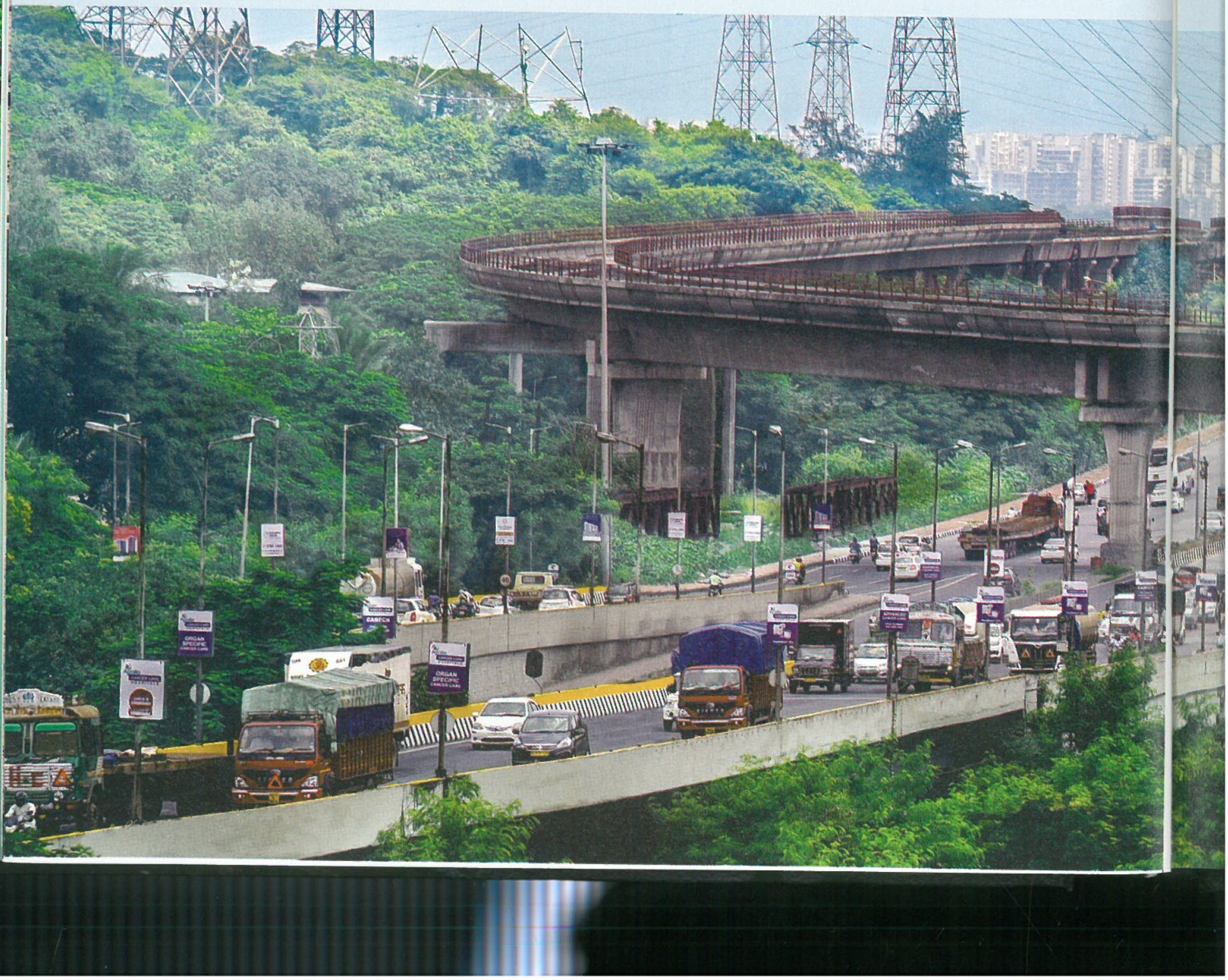
CIDCO
SITE FOR
INTERNATIONAL
AIRPORT
NAVI MUMBAI

and noise pollution, fuel saving and lesser road accidents. Besides boosting the transportation, it will enhance economic growth of the city.

In 2009, CIDCO appointed Delhi Metro Rail Corporation as consultants for Navi Mumbai Metro project. The DMRC identified 6 Metro Rail corridors. They are: Nerul-Ranjanpada-Uran (28-km), Ranjanpada-Kharghar-Seawood (14-km), Belapur-Taloja-Kalamboli-Khandeshwar Railway Station-NM Airport (22-km), Vashi-Nerul-Panvel (25-km), Dighe-Airoli-Rabale-Turbhe-Belapur (20-km) and Vashi-Ghansoli-Mahape (9-km).

CIDCO received approval in July 2009 for the three-phase Metro Rail project, i.e. Belapur-Pendhar (10.15 kms), Khandeshwar-Taloja MIDC (8.15 kms) and Pendhar-Taloja interconnection (3.5 kms). On 1st May 2011, foundation stone was laid for Belapur-Pendhar phase. On 30th September 2010, the State Government authorised CIDCO as the implementing agency for the first phase. On 30th April 2013, approved CIDCO as the implementing authority 'in principle', under the Central Metro Act.

METRO RAILWAY : The new mode of Mass Rapid Transportation.



The turnkey work of the rail systems consisting of Rolling stock, Signalling and Train Control, Power Supply, Traction, SCADA, Communication systems, Trackwork, Automatic Fare Collection, Depot equipments and maintenance for three years has been awarded to a consortium of Ansaldo STS SpA-TATA Projects-CSR Zhuzhou and the work is in progress. For the Operations and Maintenance of the Metro, it is proposed to form a Special Purpose Vehicle (SPV) in due course. The works of viaducts, stations, depot development are in progress.

The first phase terminus is planned at Belapur, next to the Railway Station Complex, to provide connectivity to the harbour line. The Depot for the phase is planned near Taloja Panchanand over approximately 20-hectare area. It will have Operational Control Centre, Administrative Building and Training Centre and maintenance facilities and test tract. The entire elevated line is based on the viaduct, a single box type segmental girder.

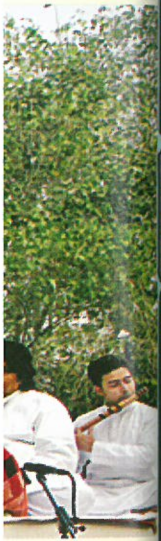
Detailed Project Reports for work on NMM phases II, III and IV are being prepared by RITES. This development will link Pendhar to Taloja MIDC – Khandeshwar – NMIA. Phase IV from Khandeshwar to NMIA will be linked to Airport. Its total expected cost is around ₹ 11,000 crores. Under Phase I, work is in progress on 11-km stretch comprising 11 stations and is expected to be commissioned by 2017 at the cost of ₹ 3,043 crores.

NAVI MUMBAI FESTIVAL

Having already created a cultural identity of the city, CIDCO stepped out further to enhance the cultural life in the city kicking off on 23rd January 2009, a mega socio-cultural event called the Navi Mumbai Festival, a series of 22 events held at 11 venues spanned in 4 days between Vashi and Panvel. The first of its kind mega event was organised in the 40 years' history of CIDCO and was an excellent example of flawless event management with not a single untoward incident reported.[2]

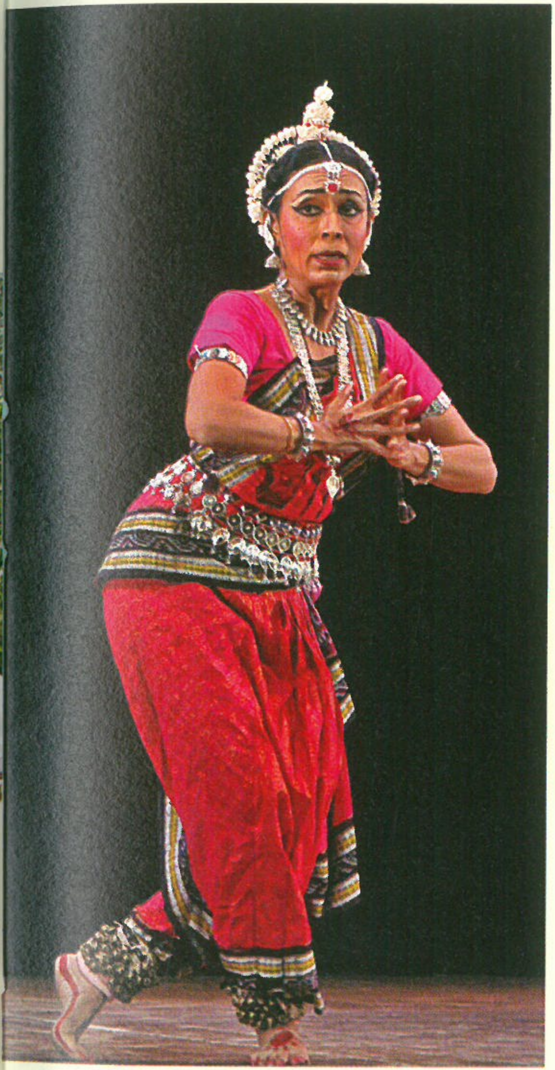
MAIFIL MOST MEMORABLE : Pandit Hariprasad Churasia accompanied by Pandit Bhavani Shankar on Pakhawaj and Vijay Ghate on Tabla.

Inaugurated at the Exhibition Ground, Vashi, the 'Art of Living', mega-festival saw the who's who from the world of music, dance and drama. After the formal opening, there was a grand musical soiree performed by the Bollywood's dazzling singer and heart-throb of youth, Sunidhi Chauhan. In her first public appearance before a huge crowd in Navi Mumbai, Sunidhi made the youth dance to her tune. The response showed as if Navi Mumbaites were eagerly awaiting hermit, was the grand get-together of who's who of Navi Mumbai civic arena



that included cabinet ministers, MLA, MLC, NMMC commissioner, the police commissioner, JNPT chairman, Navi Mumbai Mayor and others.

On the second day, the sun arose on the horizon of Navi Mumbai with the scintillating voice of Shubha Mudgal, exponent of Gwalior gharana. It was a treat for the aficionados of Hindustani classic music. It had the perfect natural ambience of Urban Haat. The winter morning at the arena theatre abutting the Belapur holding pond reverberated with Shubhaji's versatile voice. In the evening, the Urban Haat again got jam packed to hear veteran Marathi poet Mangesh Padgaonkar, whose poetry recital is always a refreshing experience for the audience.



THE DANCE DELIGHT : *Bhartnayam exponent from Namita Bodaji troupe.*

At the same time, world-renowned percussionist, Taufiq Qureshi was performing at Utsav Chowk in Kharghar node. The maestro in the fusion instrumental music mesmerised each and every one making the audience tap on his beats. The event was set on the backdrop of scenic beauty that bestowed on Kharghar through nature. The disciple and the son of the great Tabla maestro Allah Rakha, stunned the audience throughout his two-hour performance.

The night brought the melody of Ghazals. The Roopkumar-Sunali Rathod duo enchanted the audience at the Exhibition Ground, Vashi with the heart-touching songs in semi-classical genre. Simultaneously, Sumitra Iyer, the young pop singer was regaling the youth on the backdrop of the Vashi Railway Station. She captivated the audience presenting different moods.

The third day started with the Navi Mumbai Marathon on the Palm Beach Marg. Celebrities like Suresh Oberoi and Suniel Shetty

MAESTROS' MASTER STROKE : 1) Shubha Mudgal 2) Tufique Kureshi 3) Ustad Sultan Khan 4) Roopkumar and Sunali Rathod 5) Sonu Nigam

SOIREE : Kavita Seth in trance.

UNNATI COMPLEX : The 1344-tenament LIG housing in Ulwe node.

also participated. In the special section, physically handicapped also participated with their wheelchairs. In the evening, members of CIDCO Artists' Combine, who usually keep their heads down on their work desks, showcased their hidden talents to receive audience acclamation! Odissi dancer Jhelum Paranjape with her troupe performed at Vashi Railway Station and simultaneously at Nerul Railway Station, Namita Bodaji, exponent of Bharatnatyam, delighted the spectators.

After the sunset, Navi Mumbaites had a feast of devotional genre of Sufi music. Singer Kavita Seth implored the divine power through her appealing voice in the natural ambience of Urban Haat. At Utsav Chowk, Anushka Manchanda enthralled the youth. The Delhi girl's performance was the treat for the Navi Mumbai's young crowd. The model-turned pop-singer who was a member of the Indian pop girl group Viva got repeated "once mores".

The youth who wanted to shake their legs opted for Rock Band shows at Nerul Railway Station on second and third day. Lithium, DropZone, Summer Pint Junkie and Z Bridge bands performed here. DJ Stallone and DJ Salil added flavour to the shows. On the other hand, folk artistes were also performing at Panvel and Airoli. The folk genres of Koli dance, Lavani and Vasudeo gave the spectators a glimpse of Maharashtra's rich folk culture. Food festival was also held for the whole day to relish the Agri, Goanese, Punjabi and South Indian dishes.

At Panvel and Airoli, popular Marathi dramas 'Jawai Maaza Bhala' and 'Diwasa Tu Ratri Mi' were staged for the theatre connoisseurs. Vikram Gokhale, stage and film star, who is a known face for Marathi and Hindi spectators was the centre of attraction.

Bouldering competition was organised for the adventure lovers. Not to leave out the school kids, theatre workshop was held at St. Mary's Multipurpose High School, Vashi. It was conducted by renowned theatre personality Nadira Babbar, assisted by her daughter Juhi. Puppet show by internationally acclaimed Ramdas Padhye, storytelling by Marathi actress Nishigandha Wad, clay sculpture workshop by Prof. Moreshwar Pawar and airo-modeling show were specially organised for the kids.

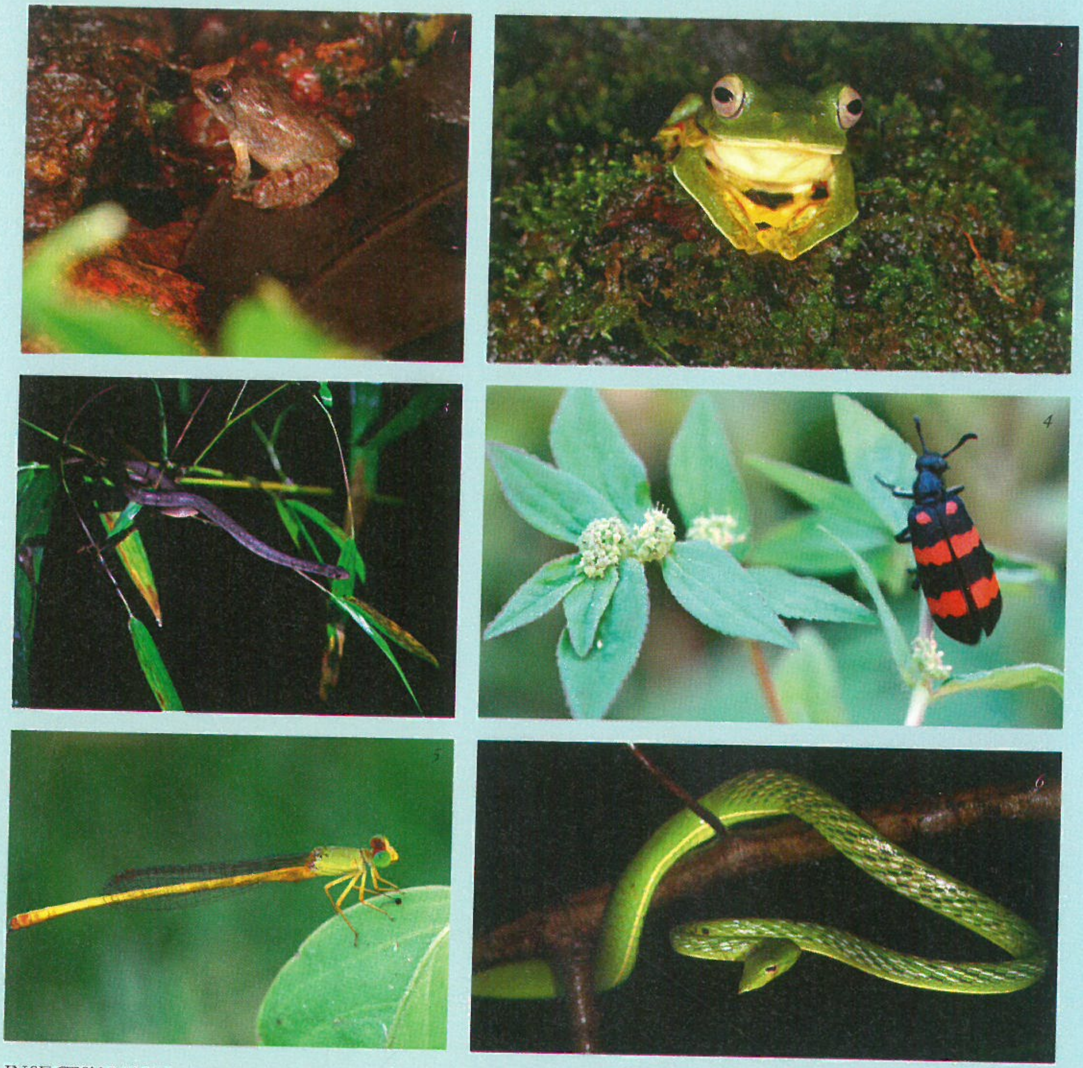
The first Navi Mumbai Festival that featured 15 seasoned artistes got concluded on the auspicious Republic Day, 26th January 2009. The variety entertainment programme based on the theme of national integration composed and directed by Sandesh Shandilya befitting the occasion took the festival at the peak.

It goes without saying that overwhelming response of the citizens of Navi Mumbai made the event a grand success. Their self-discipline helped the police force accomplish the task of maintaining the law and order as not a single untoward incident was reported at any venue. Ever since the city shaped up on the coastline of the North Konkan, there has been peace and social harmony. The law and order that was intact in the city only to corroborate that human being is a peace-loving creature on the Earth by its basic instinct.

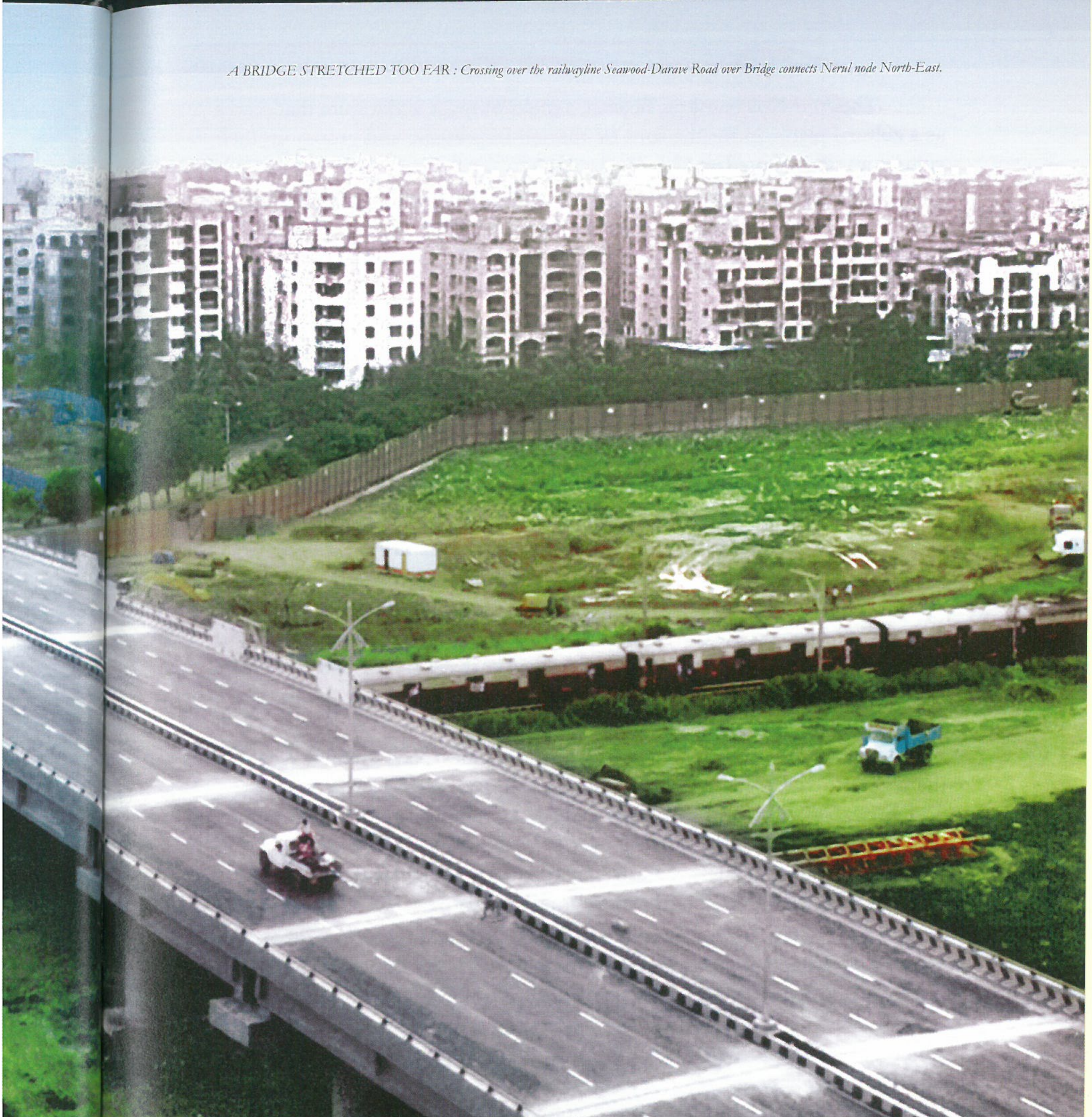
The second festival was held during the same dates that of the previous year so as to conclude it on the Republic Day of 2010.3 This time it was with much fanfare, zeal and zest. In 4 days, 42 events were held at 12 venues. Obiviously, the second lap of the festival received overwhelming response from aficianados of different genres of arts as it featered maestros of Hindustani Classical Music like Pandit Hariprasad Chaurasia, Begum Parveen Sultana and Usha Uthup as well as Bharatnatym exponent Namita Bodaji and her troupe

HOUSES BUILT BY CIDCO

Considering the need for affordable housing, CIDCO launched Unnati Housing Project for EWS and LIG in Ulwe node on 7th July 2010 and computerised lottery for the project was drawn on 27th December 2010.[4]



INSECTS' NAMES : 1) Brown Cricket Frog 2) Malabar Gliding Frog 3) Bedmiskill book snake 4) Blister Beetle 5) Cornamandal Marsh Dart 6) Vine Snake



A BRIDGE STRETCHED TOO FAR : *Crossing over the railwayline Seawood-Darave Road over Bridge connects Nerul node North-East.*

A BRIDGE STRETCHED TOO FAR : *Crossing over the railwayline Seawood-Darave Road over Bridge connects Nerul node North-East.*

The Agri-Koli Sanskriti Bhavan, a multi-purpose auditorium that serves as a cultural platform for the sons of the soil to preserve and groom up their culture, was inaugurated on 13th August 2011.

Seawoods-Darave Flyover was inaugurated on 2nd November 2011.[5] Kharghar flyover was inaugurated on 9th November 2012, while the 9-hole Golf Course and Kharghar skywalk were inaugurated on 23rd December 2012.[6]

CHANGED POPULATION TREND

After four decades, CIDCO's efforts in developing Navi Mumbai bore the expected results. Socio-economic surveys carried out by different agencies for CIDCO, corroborate that mandate given to develop the city is being fulfilled and the development is on the right path. Population in Navi Mumbai has grown by 8.6 per cent between 2001 and 2011. The city periphery called as Knowledge Corridor provides better education opportunities resulting in raising the literacy rate by 2 per cent in every decade, namely 1981-91, 1991-2001 and 2001-11.

This has been substantiated by censuses of 2001 and 2011. Comparative analysis of censuses reveals a reverse trend in population growth from South to North. Navi Mumbai population grew by 59.09% while Mumbai decreased by 7.57%. Growth in productivity and income are the natural parameters of shift to urbanization. The new population trend showed that Navi Mumbai provides good ground for the two factors. With 45.23% urban population, Maharashtra stands third highest in most urbanized states.

During the decade of 2001-11 among the cities, Navi Mumbai recorded the highest percentage of population while Mumbai recorded the lowest and Thane city stood second. Negative growth in Mumbai got shifted towards suburbs. Among the suburbs, Badalapur on the East ranked first with over 79 per cent, Vasai-Virar in Western suburbs recorded second highest with over 76 per cent and towards North suburbs Panvel stood third with over 73 per cent.

Most of the Panvel area where population is on the rise falls in urban area comprising Kharghar, Kalamboli, Kamothe and New Panvel nodes under CIDCO jurisdiction. The shift of the population towards North corresponds with the working class.[7] While daily passengers reduced by 1.78 lakhs at the Chhatrapati Shivaji Terminus (CST) between 2012-13 and 2015-16; at Churchgate Railway Station it came down to 1.05 lakhs in 2011. However, the two major factors that influenced the commuters change are availability of train services and emergence of new business centres such as Panvel, BKC and Ghatkopar. Commuters on the Harbour and Trans-Harbour link also soared due to job opportunities in Navi Mumbai limits, i.e. Vashi and CBD Belapur.

Sr. No.	Cities	Census 2001 (In Lakhs)	Census 2011 (In Lakhs)	Trend (In %)
1	Navi Mumbai	07.04	11.20	+59.09
2	Thane	12.63	18.41	+18.41
3	Mumbai	33.38	30.85	-07.57
	Eastern Suburbs			
1	Badlapur	00.97	01.74	+79.38
2	Ambarnath	02.30	02.53	+24.00
	Western Suburbs			
1	Vasai-Virar	06.93	12.22	+76.33
2	Mira-Bhayandar	05.20	08.09	+51.57
	North Suburbs			
1	Panvel	01.04	01.80	+73.07

Source: Census 2011

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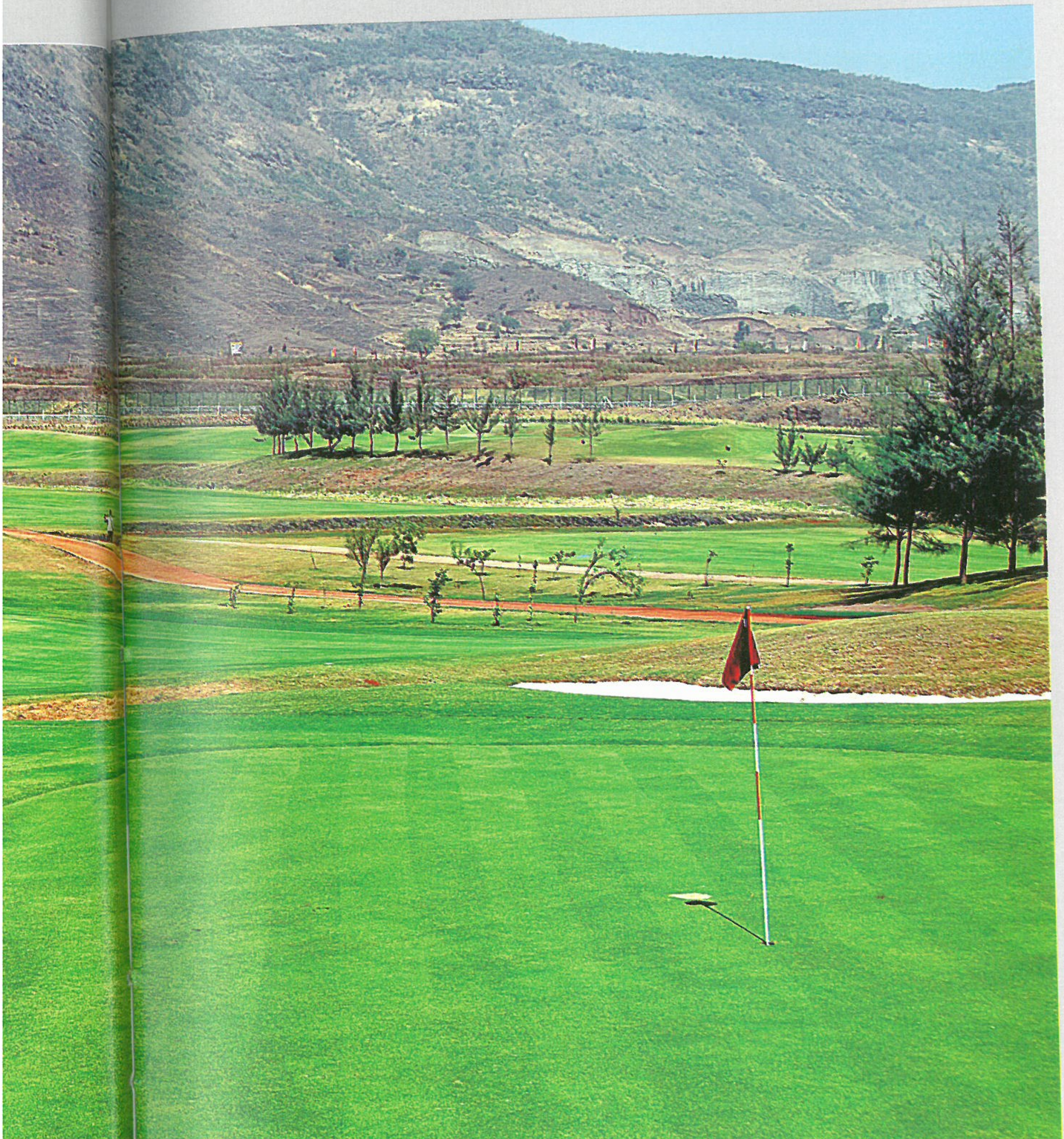
TABLETOP : *The 9-hole Golf Course with lush green terrain on the backdrop of Kharghar hill.*



MILLENNIUM TOWERS : Branded as 'intelligent housing scheme', the first of its kind housing scheme offered optic fibre backbone connectivity to each apartment.

CHAPTER X

REORGANISING THE ORGANISATION
(2013 to 2015)

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Reorganising the Organisation

~ 2013-2015 ~

We must become the change we want to see in the world
–Mahatma Gandhi

RENAISSANCE PHASE

Change is inevitable. It is the rule of nature. One has to change to be in tune with time. Those who don't change become obsolete. Unchanged things bring stagnation. It was probably with this philosophy, Sanjay Bhatia took over as the Vice Chairman and Managing Director on 4th March 2013.[1] His tenure that lasted till 13th April 2016 has been a period of rejuvenation in CIDCO. Mr. Bhatia was an influential reformist, not less than a powerful administrator. With a spiritual background, he was the first MD to give meditation sessions personally.

He emphasized on moral boosting and appealed for creating an atmosphere of mutual trust and respect. A practice of declaring the Best Employee of the Month from different departments selected by a committee of employees was introduced. The employee would get the privilege of an informal chat in a programme 'Coffee with MD' and a motivating book as a gift.

CIDCO became more citizen-centric, transparent and accountable during this period. The Navi Mumbai International Airport came on the tarmac surpassing major hitch of compensation for the Airport PAPs in the form of

Rehabilitation and Resettlement. Port City and NAINA – Navi Mumbai Airport Influence Notified Area aiming at disciplining the development in the area are other flagship projects planned. Among the major fundamental administrative changes that elevated CIDCO's image included the 26-point programme, use of infotech programmes to improve intradepartmental coordination and speedy interaction with people.

On 16th January 2013, the 1,224-apartment Valley Shilp housing project for MIG/HIG located in Kharghar, Sector 36 was inaugurated. In August 2014, CIDCO launched yet another housing project, the 3152-tenements Swapnapurti for EWS/LIG in the same Kharghar node.

ACCOUNTABILITY

In order to fix accountability on officials and lawyers to expedite court cases, Legal Tracking System has been implemented. Developed by IT section, the system was launched on 1st August 2014. Most legal documents have been digitized. Only the concerned officials and lawyers have access to the documents through passwords. The Citizen Facilitation Centre (CFC) was set up on 15th August 2014 to ensure seamless interaction with stakeholders. The CFC acts as a single window centre.[2] It consolidates and collects payments, complaints, queries and applications for permissions and certificates from citizens. A computerized grievance redressal system that is overseen by the Chief Grievance Redressal Officer is also appointed to ensure that public complaints are monitored and dealt with by the senior officials. A senior officer in every node was appointed as an Administrator, giving him authority with responsibility to solve petty problems of people in the node using his discretion. The officer interacting with

SWAPNPOORTI : An MIG/ HIG housing project at Kharghar.

VALLEY SHILP: A LIG/ MIG housing project at Kharghar

people, dealing with their grievances and other issues was considered as an ambassador of the organisation.

In September 2014, CIDCO became the first Maharashtra State PSU to adopt the 'Integrity Pact' in all contracts above the value of ₹ 5 crore.[3] Former Central Government Secretary Mr. D.T. Joseph and former Chief Secretary of Maharashtra Mr. Jayant Kumar Banthia have been appointed to investigate bidder complaints. This raised the level of confidence of bidders in the integrity of public procurement system in CIDCO. The pact aims to raise the level of confidence of bidders in the integrity of public procurement system in CIDCO.

International Exhibition and Convention Centre developed over 7.41 hectares area in Sector 30A in front of Vashi Railway Station, the 'Green Building' was inaugurated on 4th September 2014. The state-of-the-art centre has been built to provide a world class platform for prospective business opportunities. The building complex has 670-seat auditorium, food court, art gallery, cafeteria, exhibition centre and convention centre besides parking space

for 48 cars. The two buildings of Exhibition Centre and Convention Centre are connected by a bridge. It is the last project in the area of developed seven nodes that has been handed over to the Navi Mumbai Municipal Corporation (NMMC). The centre is being maintained by CIDCO.

TRANSPARENCY

CIDCO started issuing payments to all contractors through RTGS and accepting tender fees and Earnest Money Deposit for bids only through e-Payment for all tenders above ₹ 3 lakhs. The elimination of paper money went a long way in weeding out corruption. The process of opening of Technical and Financial bid is carried out transparently and bidders are encouraged to participate at the bid opening. Issuing online tendering on 4th December 2014 for 3 plots, 1 in Kharghar and 2 in Kamothe, for Composite School and Junior College for PAPs marked a new beginning.[4] The e-Tendering aimed at encouraging a larger participation from genuine applicants. CIDCO allotted flats

EXHIBITION CENTRE : *International Exhibition and Convention Centre developed over 7.41 hectares area in Sector 30A in front of Vashi Railway Station is the state-of-the-art 'Green structure'*

for different categories through computerized lottery system certified by STQC Pune, making it unbiased and trustworthy. All records are digitized and stored in Tier III Data Center and DR Site of CIDCO with the technical assistance of StockHolding Corporation of India Limited.

All the provisions of Right to Information (RTI) Act have been strictly adhered to by the Corporation. Public Information Officer, Assistant Public Information Officer and Appellate Authority appointed in every department have been designated. All Board decisions, building permissions and ongoing infra project updates are put on web. Data of occupancy certificate, architectural plans approved by CIDCO and ongoing infrastructure projects is uploaded on the web.

Business Process Re-engineering (BPR) was implemented in all departments to eliminate redundant activities and unnecessary clerical work and complexities of sub-processes. Each prevailing process was streamlined on the key focus areas presented by HODs. The BPR was aimed to simplify administrative routine and make all departments customer-frienly as well as transperant. For effective coordination among various departments, advanced SAP version was applied in the day-today administration. CIDCO implemented AutoDCR – (COPAS) for sanction of building plans to make it simple, transparent and customer friendly, leveraging Information and Communication Technology (ICT). The War Room concept was introduced first time in a meeting of the Head of Departments held on 18th March 2015. Such meetings held regularly were open for dialogue with MD to streamline projects, discuss critical issues and churn out strategies beneficial to the organisation.[5]

PREVENTIVE VIGILANCE

A new chapter started in the history of CIDCO with a high-ranking and high-profile officer from the IPS cadre, who was appointed as the Chief Vigilance Officer on 5th March 2014.[6] In fact, a separate Vigilance Department was established a year ago for the first time. Dr. Pradnya Saravade, Additional Director General of Police, took charge of the department with a focus on setting up policies and procedures for preventive vigilance and all-round transparent delivery of processes. The CVO also headed and streamlined Disaster Management Cell, Security and Fire.

The department's web portal that provides easy access to people for lodging complaints was launched on 15th January 2015.[7] This is the first initiative of its kind in the country. It has built-in protections to mask the identity of the complainants and to encourage complaints from citizens and whistleblowers. The complaints, their eventual redressal and followup feedback are also put on the portal. It acted as a deterrent against corrupt practices and facilitated delivery of speedy justice. The department organised Changing Minds' programme in which experts from different fields like litterateur – Mr. Devdutt Pattanaik, the IPS officer who scaled the Mount Everest – Atul Karwal and a teacher who started school were invited to deliver lectures on their respective subjects.

AIRPORT BIDDING

CIDCO floated global tender on 5th February 2014 inviting Request for Proposal bids from international players to develop Navi Mumbai International Airport.[8] The draft RFQ document for selection of strategic partner for the development of Airport was prepared by M/s. Louis Berger Group (LBG), Inc. USA as Prime Consultant submitted In October 2011.

Among the four global bidders who responded for the first stage of the bidding, three were qualified. They are 1) GMR Airports Ltd. 2) MIA Infrastructure Pvt. Ltd. and 3) Mumbai International Airport Pvt. Ltd. (MIAL). The MIAL is the present developer and operator of Mumbai's Chhatrapati Shivaji International Airport (CSIA) and GMR Airports Ltd. Pre-developmental works of hill cutting; reclamation and ground improvement, shifting and re-routing of Extra-High Voltage Transmission (EHVT) lines of TATA and MSETCL passing through Airport. The work is on.

NAINA INTERIM DP

CIDCO's recognition, reputation and credibility as the premier infrastructure development authority in the country, has earned it yet bigger task – to plan, control and regularise the development in the Navi Mumbai Airport Influenced Notified Area (NAINA). The State Government on 10th January 2013 appointed CIDCO as Special Planning Authority (SPA) for NAINA.[9] Spread over 561 sq. km. area, it comprises of 256 villages of Raigad district and 14 villages in Thane district.

The project, about 1.5 times the size of Mumbai and its extended suburbs, is one of the biggest urban development projects in India. CIDCO intends to play the role of a facilitator encouraging land aggregation, planned development and creation of physical infrastructure. With the development model planned, NAINA expects to break the mould and establish new paradigms in development of urban areas and shall further increase the boundaries of Navi Mumbai. The ambitious project will create new economic gateway to India.

The project area is poised to witness tremendous development on account of investments of more than ₹ 40,000 crores in mega projects of Navi Mumbai International Airport, Mumbai Trans-harbour Link and Multi-model Corridor, expansion of MIDC industrial area as well as Jawaharlal Nehru Port in the influence area in the next five to seven years. Multi-faceted economic base coupled with high-class infrastructure is bound to catapult NAINA in a different league.

CIDCO has devised Interim Development Plan (IDP) with novel land pooling concept to achieve sustainable development and realisation of physical and social infrastructure without resorting to bulk land acquisition. The scheme involves voluntary participatory development model which encourages land pooling applicable for land aggregations above 10 hectares. Farmers can come together and surrender 40% of land 'free of cost by consent agreement' retaining 60% with them.

The plan provides landowners an opportunity to unlock their land potential by participating in the development model that increases prevailing low FSI and offers a mechanism for handing over lands under physical and social infrastructure voluntarily without losing their development potential. The land surrendered to CIDCO will be used for roads, open spaces, amenities and growth centre by the landowners to authority.

The IDP was published in the State Government Gazette, Raigad district on 13th August 2014 inviting suggestions and objections from the public. CIDCO received 3,946 suggestions and objections. In the first phase, 2,733 suggestions and objections were heard on 27th, 28th and 29th November. The rest of the objections and suggestions were heard on 18th June 2015. The IDP of NAINA was submitted to the State Government on 22nd September 2015.[10]

PORT CITY

CIDCO has planned to carve out a Port City consisting of the influence area around the Jawaharlal Nehru Port. The Port was established in 1989 and CIDCO developed Dronagiri node as a Port Logistics hub due to its vicinity to the port. It hosts major companies in CFS/warehouses and a few petrol pumps and weighbridges. However, essential amenities like eateries, night shelters, repair garage, public toilets are missing in the Port hinterland. Therefore, many of these services have sprung up in the informal sector, in an unplanned manner.

The Port City comprises of 251.71 sq. km. comprising parts of Navi Mumbai, Khopta and NAINA projects of CIDCO. The Government of Maharashtra has constituted a high-level committee as a single point of coordination for collaborative action in this area. CIDCO would make strategic planning interventions in the area. The Committee is constituted of 8 government departments active in this area apart from the prime movers, namely CIDCO and Jawaharlal Nehru Port Trust (JNPT). A state-of-art infrastructure ecosystem is in offing in the form of a new 414-Ha Logistic Hub, which will catalyze the expanding JN Port into one of the best in the country. The Hub, contiguous to the JN Port and the Dronagiri node will derive access from the NH-4B and be connected to the SH-54.

CIDCO organised a two-day brainstorming workshop on JNP-Influence Area City Planning on 2nd and 3rd March 2015, at Exhibition Centre, Vashi.[11] The workshop comprised of three sessions namely Understanding Port Operations and the Logistic Chain, Symbiotic relationship – Port and its City and Industry Perspective and Best Practices.

The workshop dealt with core issues relating to the port-based physical infrastructure such as identifying the stakeholders involved in port, logistic operations and their responsibilities as well as jurisdiction; harmonious relationship between the port and its city, i.e. influence area; city's expectation from the port in bolstering the local economy through various means such as providing jobs, resources and attracting investment. The symposium concluded with overall view of the generic problems faced by the Ports and Logistic Industries.

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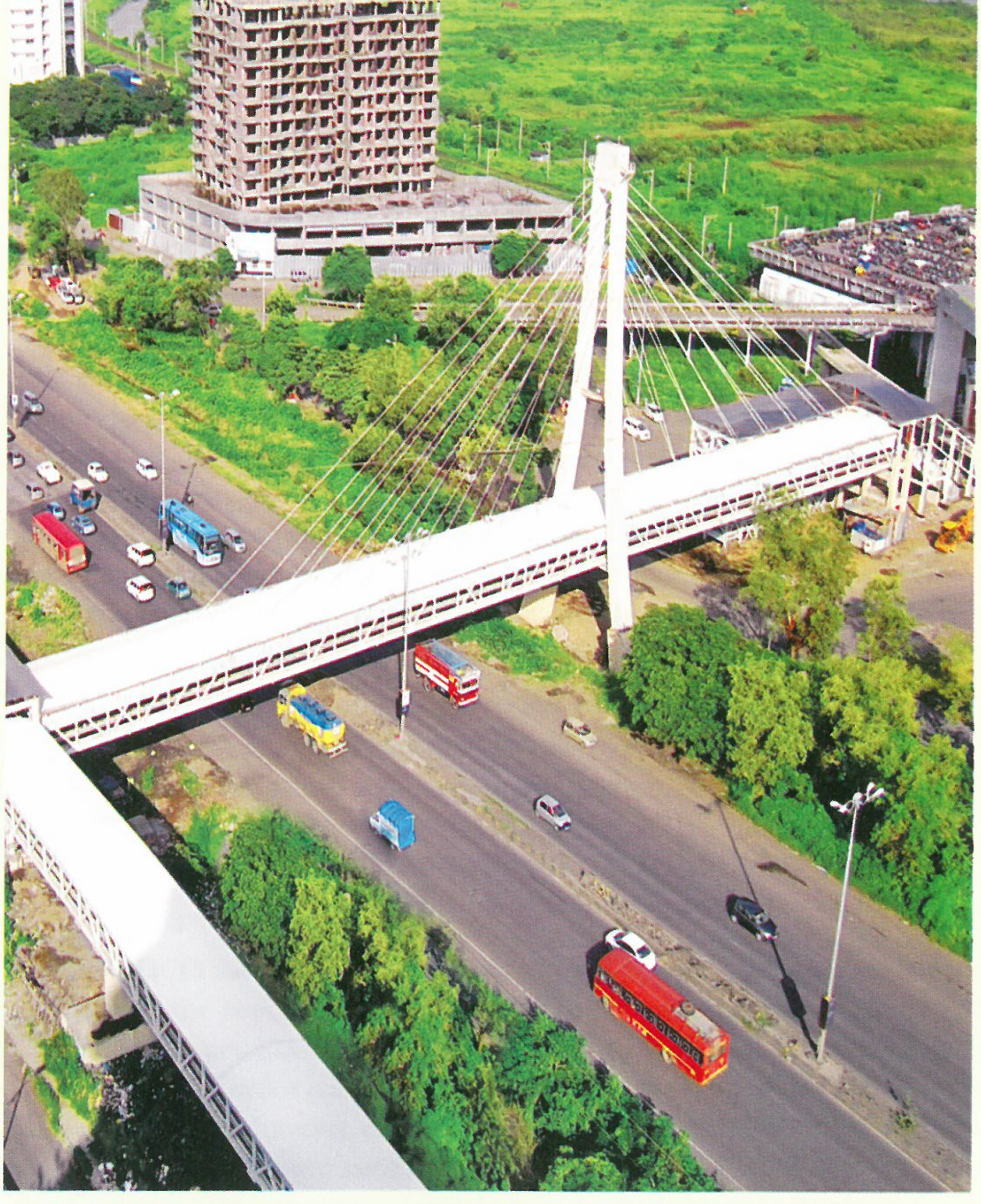

SKYWALK : The longest skywalk in Navi Mumbai connecting Kharghar Railway station with residential area.

CHAPTER
XI

ACCOMPLISHING THE TASK
(2016...)

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Accomplishing the Task

~ 2016... ~

Every block of stone has a statue inside it
and it is the task of the sculptor to discover it.
–Michelangelo

YET ANOTHER TRANSITION

When Mr. Bhushan Gagrani took over as the new Vice Chairman and Managing Director on 13th April 2016, CIDCO had already entered 47th year, just 3 years short of the Golden Jubilee, marching towards accomplishing the tasks of some flagship projects on anvil.[1] He had a track record of successful Make in Maharashtra conclave in February 2016 as the MD of the Maharashtra Industrial Development Corporation. His predecessor, Mr. Bhatia took over as the Chairman of the Bombay Port Trust.

The airport development work took up momentum putting it almost the tarmac with all technical as well as environmental clearance in hand and PAPs willing giving their consent to hand over the land. On 2nd May 2016 the financial bid document, Request for Proposal (RFP) to develop the Navi Mumbai International Airport, was issued to three international bidders who qualified in the first bid.[2] They are given five months' time to submit the proposals. After the scrutiny, the Special Purpose Company to develop the airport will be appointed by the end of this fiscal year. CIDCO will hold 26% of equity in the Special Purpose Vehicle (SPV), the company that will develop the project.

The two-runway airport is coming up on 2,268 hectares, estimated cost of which CIDCO has projected at this stage ₹16,000 crores in four phases. The first phase is likely to start by 2019. In this phase, the airport will cater to 10 million passengers per annum (MPPA). The entire airport is supposed to be completed by 2030 to handle 60 MPPA. The day is not too far when Navi Mumbai will get the wings to fly to the destination of global choice, prominently marking Navi Mumbai on the international map.

CITY WITHIN A CITY

Subsequent to the 16th May 2016 notification of the State Government, Panvel Municipal Corporation got established on 1st October 2016 in the seven Southern nodes, viz. Kharghar, Kamothe, Kalamboli, Pushpak, Panvel, Ulwe and Dronagiri spread across 120 sq. km. comprising of 29 villages[3], the area hitherto under the jurisdiction of CIDCO for planning and development. Maharashtra's first ever Panvel Municipal Council that was formed in 1852 has been upgraded on the basis of 2011 census that recorded a population of 509,901. Formation of the new local self-government will replace CIDCO, Gram Panchayat, Zilla Parishad and municipal council acting as planning agencies in the area.

The 29 villages in the Panvel Municipal Corporation (PMC) are: Taloja Panchanand, Kalundre, Kharghar (including Majre Belpada), Owe, Devichapad, Kamothe, Chaal, Navde, Navdeghar, Tondhre, Pendhar, Kalamboli, Kolhekhar, Ambetkhar, Roadpali (Khidukpada divided village), Padghe, Valavli, Pale Khurd, Tembhode, Asudgaon, Khairne Budruk, Bid, Adivali, Rohinjan, Dhansar, Pisa, Turbhe, Karavle Budruk, Nagihari, Taloja Majkur, Ghot and Koynavele and (Ghot camp).

Till the elected body of the new Municipal Corporation is formed, CIDCO will complete the ongoing and planned housing and other physical infrastructure projects and on completing the projects, it will hand over the area to the PMC in phased manner as urban development design is based on acquire, develop and handover (ADH) principle.

Pushpak, the 14th node will remain with CIDCO to be developed to cater to the requirements of the proposed International Airport. It was planned in 2013-14 as airport-oriented node and was therefore named Pushpak, a legendary plane mentioned in Ramayana. Adjacent to the upcoming Navi Mumbai International Airport, it is spread across 230 hectares. Plotting of the node has already been done and the plots have been earmarked through computerized lottery to the project-affected people from the 10 villages whose lands CIDCO acquired for the airport project. It is going to be altogether a different township.

Besides catering to the needs of the NMIA, the largest of all the nodes spread over 5,800 hectares will consist of Non-Aeronautical Zone (NAZ), Regional Park Zone (RPZ), Mangrove Park, Airport and Rehabilitation as well as compensation land for the airport PAPs.

SMART CITY

It is in this area, CIDCO initiated planning of Smart City to comply with the Central Government's ambitious plan to develop 100 Smart Cities in the country. The CIDCO's Smart City vision is to develop a habitat that provides quality life for all and business environment with citizen-centric governance while ensuring transparency and efficiency. The ambitious project was inaugurated by the Chief Minister, Mr. Devendra Fadanvis on 4th December 2015.[12] The 'Brownfield' project of Smart City in the Southern part comprises seven nodes, viz. Kharghar, Kamothe, Kalamboli, Pushpak, Panvel, Ulwe and Dronagiri spread across 120 sq. km.

With a view to preserving and enriching the environment, it encompasses the following guiding principles and targeted interventions; they are: Smart Organisation, Transparency and e-Governance, Environmental Sustainability, Waste Management, Quality Life, Inclusive Planning (GIA, Urban Renewal, PAP Training, Affordable Housing), Physical Infrastructure (Roads, Water Supply, Power), Transit-oriented Development (Metro, Railways) and Financial Self-sustainability.

One of the key building blocks of CIDCO's Smart City is to develop Navi Mumbai as a city of choice for its residents by offering livability and quality of life. This will be attained by providing public safety, open spaces, social facilities, etc. for a stress-free, environment-friendly citizen experience.

Special projects such as Nature Park, Central Park, Golf Course, Riverfront development, have been envisaged to promote greenery and ensure environment sustainability. These have been conceptualized with a view to not only add value to the city and offer its citizens opportunity for recreation, etc., but also make water bodies more accessible to the people so that unscrupulous activities do not take place and degrade the environment.

CIDCO has provided excellent socio-economic facilities thereby improving the quality of life for the citizens. It allots plots for Schools, Higher Education – Degree College/Professional Colleges/Business Schools/ITI &

Vocational Training Centre/Student Hostel/Professional Association, Social Welfare Plots – Mahila Mandals, Working Women Hostels, Religious/ Spiritual places.

SWACHH BHARAT ABHIYAN

The mission initiated by the Government of India is being fully supported by CIDCO, through employment of good sanitation practices including solid waste management and preventing open defecation through construction of toilets for the convenience of people. New STPs, centralized Electronic Medical Records for all patients, mapping of public health hotspot third party, monitoring of Garbage Disposal, 60 Villages Garbage Disposal, Decentralized Solid Waste Management – JNPTIA, Solid Waste – Mechanical Biological Treatment (MBT) at Chaal Village, Taloja.

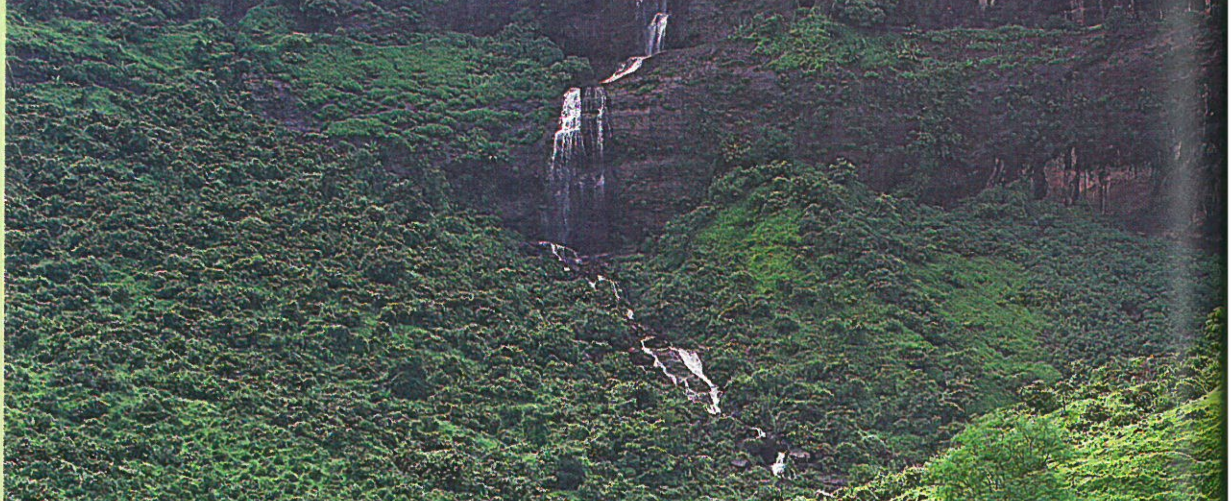
Foundation stone of the project for the Navi Mumbai area outside the NMMC jurisdiction was laid on 19th May 2006 by the then VC & MD Ashok Sinha.[4] The environment-friendly and pollution-free project is spread over 14 hectares. It will have a weigh bridge, segregation area with pre-processing plant, compost area landfill and leachate holding pond. In also includes a tree-belt of 15 meter width.

The two-tier, the most modern technology implies collection, transfer and transportation of solid water till the site is in the first phase and in the second lap the waste processing and disposal will take place. The process involves biodegradable and non-degradable waste which will further be segregated in recyclable and non-recyclable components. Organic manure is developed from the bio-degradable waste.

GREEN CITY PROJECT

Fulfilling its commitment of Green City, CIDCO has undertaken a range of projects, namely riverfronts, waterfronts and Marina. It has also worked out a comprehensive model to protect and enrich open spaces. It has been sensitive towards preservation of environment since the inception of the Navi Mumbai project and has accordingly taken measures to protect it. With renewed vigour, it is rededicating itself to this cause by strengthening its efforts through development of mangrove parks, Nature Park, special projects like riverfront development, etc.

At the city level, out of the notified area of 343.70 sq. km. to be precise, almost 32% of the gross area is kept and maintained under open-use activities



PANDAV KADA : A risky spot, yet, favourite of the monsoon picnickers.

which includes RPZ of 62 sq. km. (18% of the area), No Development Zone of 36 sq. km. (10% of the area) and Open Spaces, i.e. nodal greenery of 13 sq. km. (4% of the area). By following innovative Dutch method of storm water disposal, the reclamation level of land is kept low thereby reducing quantity of Murom required for reclamation.

Realizing the importance of mangroves in preventing inundation of land and preserving the unique ecosystem of these wetlands, CIDCO has envisaged an action plan to preserve the mangroves. In all, 1,471 hectares of mangrove lands covered under the No Development Zone has been handed over a long time back to the Forest Department to take care of the same.

CIDCO has embarked upon developing the mangrove park at Vaghivali in an area of 245 Ha. at a cost of ₹ 50 crores and another one on land between Vashi and Nerul covering 289 Ha. In order to improve awareness of the importance of coastal mangroves, flora and fauna, these mangrove parks will have nature interpretation centres for the people and places for observing birds and other species.

AFFORDABLE HOUSING

Under the Urban Renewal Scheme, these unauthorized structures will be brought into the planning framework and will be provided basic services. As part of this urban renewal exercise, large affordable housing stock will get generated. Housing for economically disadvantaged is a core commitment of CIDCO. It has an action plan which envisages construction of 55,000 EWS and LIG houses in the next 4 years by using cutting-edge technologies. Using innovative land pricing policies, CIDCO will deliver houses which are truly affordable, by not loading land costs on the project. One of the key elements of the project is to give houses which are low on maintenance costs. Works on 3,590 EWS and LIG houses is already in progress.

CIDCO has prepared an action plan to construct 10,000 houses every year catering to all stratums. It has till date built approximately 1,23,577 houses out of which 51% of the houses are for EWS/LIG, while 26% was reserved for MIG and 23% for HIG.

FLAGSHIP HOUSING PROJECTS

LAUNCH YEAR	HOUSING PROJECT	LOCATION	NO. OF HOUSES	BUILT FOR
1991	BUDP II (aided by WB)	Kopar Khairane	5,000 Site & Service houses	EWS (Mathadi Workers)
1991	BUDP (aided by WB)	Kharghar, Kalamboli, Nerul & New Panvel	11,238 serviced residential sites (7,120 core units)	EWS
1993	Seawood Estate	Nerul	1,536 apartments	HIG
2000	Millennium Tower	Sanpada	1,562 apartments	HIG
2000	Gharkul, I	Kharghar	1,152 tenements	MIG/HIG
2001	Nivara	New Panvel	480 tenements	LIG
2002	Gharkul, II	Kharghar	240 tenements	MIG/HIG
2002	Spaghetti	Kharghar	1,456 tenements	MIG
2002	Gharonda	Ghansoli	3,236 tenements	LIG/MIG
2013	Valley Shilp	Kharghar	1,221 tenements	MIG/HIG
2014	Swapnapurti	Kharghar	3,152 tenements	EWS/LIG

In the transit-oriented development, CIDCO has planned Nerul/Belapur-Seawoods-Uran Rail Corridor and is being developed by CIDCO and Central Railway on 67:33 cost ratio respectively. The 10-station corridor is proposed to be commissioned in 2 phases, Phase I is expected to be completed by December 2017 and Phase II by June 2019 at the total cost of ₹ 1,782 crores. The project includes terminus at Panvel Station, Smart Parking, Doubling Belapur-Panvel Corridor, Belapur-Seawoods-Uran Corridor, Panvel-Karjat Corridor, Thane-Turbe-Nerul-Vashi Rail Corridor, Ropeway and Metro Line I, II, III and IV.

Besides nodal infrastructure development, additional infrastructure planned in the area are JNPT Expansion, National Highway Expansion, coastal road in Dronagiri, coastal road connecting Ulwe to MTHL, extension of Palm Beach Marg from Ghansoli to Airoli, Balganga Dam land acquisition and water supply scheme, Kondhane Dam, Hetawane Additional Water Resource, MJP Scheme augmentation, Barvi Dam, PSID Kharghar, PSID Ulwe, Passenger Water Transport, Cycle Track and Heliport.

CIDCO is developing 'Pushpak Nagar', adjacent to the upcoming Navi Mumbai International Airport spread across 230 hectare, as a 'Greenfield Smart Township'. Airport and Pushpak are being developed with its own self-generated resources. The other ongoing mega projects are Navi Mumbai International Airport, NAINA Project and Metro Railway.

The Draft Development Plan for entire area excluding the area of Interim Development Plan (23 villages) has been published on 7th November 2016 inviting suggestions and objections from the public at large and all stakeholders. Subsequently, the DDP was uploaded on CIDCO's website.

The Draft Development Plan is divided into two broad phases. Phase-I admeasuring 67 sq. km. wherein CIDCO has prepared detailed plan on the basis of 60:40 model, earmarking 40% of the developable area as city level reservations such as city level roads, city level open spaces, amenities and growth centre.

CIDCO in the Phase – I area is committed to carry out infrastructure development in the next 10 years. Phase-II, designated as Limited Development Zone, shall have limited development potential. However, in Phase-II area, broad road network is proposed to ensure proper connectivity to the hinterland.

In the second leg of the bidding process, 9th January 2017 was decided as the last date for submission of financial bids, but subsequently, two extensions i.e. 25th January 2017 & 13th February 2017 were given for submission of financial bids. Finally GMR & MIAL (GVK) had submitted their financial bids which were opened on 13th January 2017 after giving extension for two times.

M/s. GMR Airports Limited offered to share with CIDCO an annual gross revenue share of 10.44% while M/s. MIAL (GVK) had offered 12.60% share of the annual gross revenue of the project. Evaluation Committee will prepare a report on qualified bids which will be sent to PMIC and then to State Cabinet for its approval. State Cabinet will take final decision about selection of the bidder.

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CHAPTER XII

INDUSTRIAL EVOLUTION

(1970 to 2000)

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Industrial Evolution

~1970-2000~

While civilization has been improving our houses,
it has not equally improved the men
who are to inhabit them. It has created palaces,
but it was not so easy to create noblemen and kings.
-Henry David Thoreau

DEVELOPMENTAL PARADOX

Even a cursory glance at the development in Navi Mumbai in almost a half century, reveals that the graphs of development of the city vis-à-vis Mumbai, ironically ran paradoxical – ethically, culturally, socially, physically and politically; even as Mumbai has retained its status as economic capital of the country.

The organized crime, killings, riots, blasts and deteriorating law-and-order situation has so much defaced Mumbai that it lost its pre-eminence as a port-based city and capital of textile factories have lost their stronghold in the city as embodied in the emblem of Municipal Corporation of Greater Mumbai designed years ago necessitating the change to reflect the present reality.

Navi Mumbai started developing in the 1970s as a better option to Mumbai. It was around this organized crime described as the 'underworld' started developing in Mumbai that gained new dubious identity as the underworld capital of India. The largest city of India and its financial capital served as a perfect pitch for the game of crime. 'India's first don', Haji Mastan grew as notorious smuggler during 1970-80.[1]

The others who dawned on the crime horizon of Mumbai are Karim Lala, Sukur Narayan Bakhia, Vardhabhai aka Varadarajan Muniswami Mudaliar. Lala controlled bootlegging and gambling in the city in 1940 and was the undisputed king of the trade till 1985. Vardhabhai operated from early 1960s to 1980. Number three on the world's 10 most wanted, Dawood Ibrahim entered the arena at the fag end of the trio's career and changed the scenario.

The organized crime group controlled by Dawood Ibrahim is known as the 'D Company'. Dawood, unlike other gangsters, ensured that his men were carefully chosen. The men he chose in the '80s and '90s showed unflinching loyalty, and were willing to die for them, because these gangsters took care of their men and families.

The 'D Company' gradually spread its wings beyond borders and its hideous face came to the light first time after the serial bomb blast in 1992. Investigating agencies gathered the evidence that D Company had organized and financed planting of explosives of RDX in various parts of Mumbai that caused the blasts. He is currently on the wanted list of Interpol for cheating, criminal conspiracy and running an organized crime syndicate.

According to the United States Department of Treasury, the D Company cartel may have had ties with Osama bin Laden. As a consequence, the United States declared Ibrahim a "Specially Designated Global Terrorist" in 2003 and pursued the matter before the United Nations in an attempt to freeze his assets around the world and crack down on his operations.

Indian and Russian intelligence agencies have pointed out Ibrahim's possible involvement in several other terror attacks, including the 2008 Mumbai attacks, as per Interpol. In 2010, a US Congressional Report claimed that the D Company has a 'strategic alliance' with Pakistan's ISI ever since he took to hiding in Pakistan. His location has been frequently traced to Karachi, Pakistan, a claim which Pakistani authorities have denied.

Chhota Rajan was a former key aide and lieutenant of D Company. He also worked for Rajan Nair, also known as Bada Rajan. Chhota Rajan took over the reins of Bada Rajan's gang after Bada Rajan's murder. Chhota Rajan was arrested in Bali by Indonesian police on 25 October 2015. He was extradited to India on 6 November 2015. He escaped Dawood's plot to kill him.

Yet another gangster who created terror in Mumbai is Arun Gawli known as Daddy. He is based at Dagdi Chawl, a well-fortified den where he enjoyed protection of residents. He was finally convicted for murder of a political leader in August 2012. Gawli and eleven others were found guilty in the case. This was the start of the change in the underworld. It was also the beginning of corporate underworld, where people would keep guns in their drawer and earn money through investments.

With the crime on rise, law-and-order situation deteriorated in Mumbai. Common man witnessed bloodbath on the streets in 1990s with gangs wrestling for control. Encounters by rival gangs and later by police calmed down the gang war. The underworld just changed its mask. They started targeting the rich and famous; this led to a spree of murders of famous personalities from filmdom to politics.

In 1997, cassette king and film producer Gulshan Kumar was killed, in 1998 six Shiv Sena workers, two attempts were made on the life of Mumbai's former mayor Milind Vaidya in 1998 and 1999. From 1995, the incidents of gang-related violence rose fourfold by 1998. This made the state enact the stringent MCOCA, which helped the police decimate the underworld's control to a large extent. The crackdown saw the gangs spill over to Thane and Navi Mumbai, and also to the districts of Pune and Nashik.

Leaders of workers' union like Shripad Amrit Dange, George Fernandes, Dr. Shanti Patel and Dr. Datta Samant have ruled over Mumbai for several years. Becoming a fiery trade union leader, Fernandes organised many strikes and bandhs in Bombay between 1950 and 1970. The most notable agitation he led was the 1974 Railway strike.

Samant's call for an indefinite strike on 18th January 1982 changed Mumbai's status as India's textile capital. This finally led to closure of over 50 mills. And around 2,50,000 workers who participated in the strike lost their source of bread and butter forever. With this, streets of Mumbai that used to bustle with slogans of agitating workers went silent. In the succeeding years, most of the industry moved away from Bombay after decades of being plagued by rising costs and union militancy. It is one reason why some industry in India settled in Gujarat.

REVOLUTIONIZING INDUSTRY

It is during this period, CIDCO developed full-fledged Navi Mumbai city spread over 344 sq. km. land. The two major mandates given to CIDCO as new-town development agency were to facilitate efficient and rational distribution of industries over the State, balancing development of urban centres in the hinterland; and to provide training and all possible facilities to the existing local people in the project area, to enable them to adapt to the new urban setting and actively participate in the economic and social life of the new city. In fulfilling the objectives, CIDCO brought sea change in the industrial sector paving the way for non-polluting industries on the horizon of Navi Mumbai.

There were dedicated Chemical/Petrochemicals, Pharmaceuticals, Engineering and Electronic Zones around the periphery of the proposed new city that catered to the needs of International Market and efficient business. The two large industrial areas were Thane-Belapur Industrial Belt (TBIB) also known as the Trans-Thane Creek Area (TTCA) is situated in Zone II of Mumbai Metropolitan Region Development Authority (MMRDA) to the North of the proposed Navi Mumbai and Taloja Industrial Area to the South of the city. It is one of the major industrial belts in the country. TBIB mainly covers a strip between Thane Creek on the West, reserved forest land on the East; CBD Belapur on the South and Thane city limit on the North, admeasuring around 162 sq. km. area.

The industrial development in TBIB commenced in 1961, with the declaration of Maharashtra Industrial Development Corporation (MIDC). City and Industrial Development Corporation (CIDCO) developed a number of residential and commercial zones in this area to support MIDC's prime objective to promote chemical, engineering and other auxiliary industrial units.[2]

The TBIB witnessed a sharp growth of industries in the mid sixties in terms of number of units, capital deployed, employment and turnover. Most of the industrial units were the high capital intensive industries. The basic petro-chemical units like NOCIL and Herdillia Chemicals were set up in the late 1960s. This was followed by setting up a large number of chemical industries such as Polyethylene Plastic and Resins, Synthetic Tanning Agents Leather, PVC Products, etc. The Thane-Belapur Industrial Belt had 72 industrial units in 1974. This increased to 533 in 1984 and 1931 in 1990. There were about 2,300 industrial units with an employment of over one lakh with an annual turnover of more than 10,000 crores by the end of 20005. After the closure of NOCIL and ICI from TBIB, industries related with Information Technology and Information Technology-enabled Services replaced and this transformed the economic base of Navi Mumbai.

In a span of 35 years from 1965 to 1999, the entire area was transformed from that of a sleeping village, where fishery was the main occupation, into a large vibrant industrial centre. The following table reveals the growth of industries in Thane-Belapur Industries Belt (TBIB). A nature of cross section of the industries set up here give an idea about the major thrust areas for various countries to establish business relations with the local industry, trade and commerce. The classification of industries is as follows:

SR. NO.	PRODUCT	UNITS	PERCENTAGE
1.	Engineering	730	36.5
2.	Chemicals	400	20.00
3.	Pharmaceuticals	50	02.5
4.	Food	50	02.5
5.	Textile Processing	50	02.5
6.	Petrochemical	10	00.5
7.	Dyes & Intermediates	50	02.5
8.	Steel & Allied	25	01.25
9.	Electronics	300	15.00
10.	Oil Processing	10	00.5
11.	Paper	02	00.1
12.	Plastics	23	01.15
13.	Misc.	300	15.00
	TOTAL	2000	100.00

INTERNATIONAL INFOTECH PARK

With the advent of Navi Mumbai, the industrial sector in the area got transformed. Air polluting industries faded out gradually. Navi Mumbai's economic base was expected to be unique with more dependence on private sector activities like wholesale trading and processing activities in agricultural produce, Iron and Steel stockyards and wholesale markets, port-based commercial and industrial activities, private and public sector offices, training and research and development centres in selected District Business Centers (DBCs) and Central Business District (CBD). At the time of formation of CIDCO in 1970-71, the only economic input available was about 16,000 industrial jobs in the Thane-Belapur belt; huge amount of money was being spent by each company in transporting their workers to and from Mumbai.

Realizing the growing importance of information and technology, Government of Maharashtra identified selected areas suitable for the growth and development of this industry in the state. The International Infotech Park, Vashi was inaugurated on 14th June 1998. The IIP is located at the most ideal location. More than 6 lakh sq. ft. built-up premises in the commercial complex of Vashi Railway Station have been earmarked for the Information Technology Park (ITP). The companies VSNL, Hughes Ispat, STPI, the National Stock Exchange Inter-connect, etc. have already started functioning. The Infotech Park created about 50,000 jobs directly or indirectly.

INTERNATIONAL TECHNOLOGY CENTRE

To ensure a place of pride for Maharashtra, in this new scenario, CIDCO has developed yet another infotech hub, the International Technology Centre in Belapur node which is known as the Central Business District. It is accessible from all parts of the country by an expressway and efficient commuter transport nodes of rail, road as well as water. The hub is located right in the railway station complex. The state-of-the-art technological surroundings with 10,00,000 sq. ft. of built area in a beautifully-designed building offers adequate uninterrupted, stable power supply, residential facilities in close proximity, health club, well-designed conference facilities, parks and gardens with plenty of parking space. It is ideal for companies/firms offering IT enabled services. WIPRO, a heavyweight in IT sector has already put its footmark here by acquiring almost 16% (1,56,000 sq. ft.) of the available space.

MILLENNIUM BUSINESS PARK

The Millennium Business Park developed by MIDC, located across the new Airoli Bridge in Navi Mumbai was planned to mark the beginning of the New Millennium – the year 2000. It is the largest software, corporate and business facility in the country. Spread over 48 acres of well-planned landscaped environs, adjacent to a green belt, Millennium Business Park has 20 lakh square feet saleable constructed area within 32 buildings of the complex customised to suit individual buyers requirements. Its strategic location provides easy access to Mumbai, Thane and Pune besides industrially developed cities like Kalyan, Dombivali, Ambarnath and Bhiwandi.

KNOWLEDGE PARK

The MIDC now offered a sprawling "Knowledge Park (KP)" at Airoli, Navi Mumbai. Spread over around 15 hectares, it offers valuable land to Electronics, Hardware, Biotechnology, Research Activities, Telecommunication and Information Technology based industries that could be the support base for the industrial units in the Asian Countries. Designed as 'research park,' it provides quiet and attractive atmosphere for the purpose with excellent services of transport and communication to Mumbai, Thane and suburbs. It is located on the Thane-Belapur Road and at the outskirts of Thane Municipal Limits; it is 45 minutes away from Chhatrapati Shivaji International and Domestic Airports and also from proposed airport at Navi Mumbai.

IT JOB HUB : The International Infotech Park (IIP) above the Vashi Railway station houses IT giants.

TIONAL INFOTECH PARK
7
3
2

WHOLESALE MARKETS

Along with the industrial activities, a huge business turnover is taking place in the Agriculture Produce Market Complex (APMC) at Vashi that houses wholesale markets of onion and potato, fruits and vegetables, etc. in the market of Navi Mumbai. Wholesale markets for processed agricultural products, grains, pulses, sugar, jaggery, condiments, spices, dry fruits, coconut and edible oils are also situated in the complex. It also houses shop-cum-godowns and traders' offices.

Cold storage units, agriculture processing plants and service industries are also situated in Vashi. There is a rich and fertile hinterland to support the activity of agro-based industries for which a market is very wide. There is also a huge wholesale market of Iron and Steel in Kalamboli.

STOCK MARKET

This area has an exclusive stock market which has been recognized at the national level, having its registered office at International Infotech Park, 5th floor, Tower No. 7, Vashi, Navi Mumbai and created National Level Market by interconnecting 15 recognized National Stock Exchanges of Bangalore, Bhubaneswar, Madras, Cochin, Coimbatore, Guwahati, Hyderabad, Jaipur, Ludhiana, Mangalore, Madhya Pradesh, Saurashtra-Kutch, Uttar Pradesh, Vadodara and Magadh Stock Exchange.

It has developed a total solution to provide trading, clearing and settlement solutions for the members of these participating exchanges and therefore all such traders of the participating exchanges have access to this National Level ISE Segment in addition to the exiting local trading. Inter-connected Stock Exchange of India Ltd. is the issuing authority of the dealership rights to applicants and to list securities.

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CHAPTER XIII

ENGINEERING INNOVATIONS

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Engineering Innovations

Innovation is an evolutionary process,
so it's not necessary to be radical all the time.
-Marc Jacobs

TECHNOLOGIES FOR BETTERMENT

Excavations reveal that human civilizations knew concepts of urban planning and engineering since centuries. In ancient times, modular construction and standard elements were used instead of casting with concrete. These structures have stood all the natural calamities like earthquakes and floods without any damage for ages. Inspired by their grace, grandeur, strength and styles, architects and engineers used innovative techniques as demanded by time.

CIDCO engineers are no exception to this; to be in tune with the dynamics of ever-changing technologies while developing various housing schemes, they took utmost care of aspects such as design, foundation, material quality and ecological balance, needs of people, urgency and aesthetics. They used quality-effective technologies and innovative methods to provide affordable, durable, habitable houses.

Construction technologies for residential buildings were judiciously used considering labour, material cost, site properties and economies of scale and time of completion. CIDCO launched its first housing scheme in 1972 in Vashi. For E Type (G+4) housing at Sector-1, load-bearing composite masonry involving brickwork and RCC mullions technology was used while for D Type (G+5) housing at Sector-1, technologies like Prefab Channel Slab was used.

MARINE CLAY FOUNDATIONS

Marine clay is the most difficult strata to deal with if encountered in foundation. Whether the weight on foundation is heavy or light, marine clay is bound to create some problem. When saturated, it becomes almost fluid but when dry, it becomes soft rock. So it is necessary to take care of the foundation/structure when clay gets saturated. If the marine clay with stabilized Murom is used in the foundation trenches, it needs to be removed and replaced with a mix of hydraulic line and Murom – up to 0.5 mt. from the finished ground level; on top of it regular strip footing is laid for load-bearing walls.

Pre-cast Bored Piles : This technique is used for shop-cum-godown building at APMC, Vashi. It proves useful for marine structures like wharves and jetties, where presence of ground water table results in insufficient compaction of concrete, where high resistance to lateral forces is required or where protective layer on pile surface is recommended. This kind of construction method is recommended where depth of soft soil and availability of hard rock is up to 8.0 mt., where ground water table is high with sulphur and chloride content beyond permissible limits.

Cast-in-Situ Piles : This technique is used for Vishnudas Bhave Auditorium, Vashi. It is used for multi-storied buildings and heavy structures. It is end-bearing pile with concrete poured with the help of MS liners used to prevent soil collapse and to protect die concrete from tidal effect near coastal region. This technique has been proved to be the most economical where depth of soft strata is more than 4.0 mt. and diameter of pile is more than 350 mm.

Ribbed Foundations : It has been used for Awadh Hotel, CBD. CIDCO used ribbed foundation for low bearing capacity, light structures with higher spacing of columns. It is used to encounter thick crust of compressible soil like marine clay. It is an alternative solution to raft foundation where supporting columns required for superstructure are far apart. It ensures uniform foundation settlement of the structures and provides safety in design and resists very high bending stresses.

Straight Hand Auger Piles : This economical technology was first used by CIDCO for low-cost B-L type houses in Vashi, Sector 15. This partially end-bearing and partially friction pile technology is recommended to use for low-cost housing, lightweight structures and for hard strata available at 1.5 mt. to 2.0 mt. depth.

Lime Murom Stabilization : The technology was first used for B Type low-cost housing in Ghansoli, Sector 7. It is useful for stabilization of clayey soils. Lime required for stabilisation usually varies from 2% to 10%. Suitable for lightweight structures where soil condition is difficult to carve, it replaces compressible soil by compacted soil. Load transfers at a depth where guaranteed bearing capacity of soil is met due to existence of preoccupied weight of soil crust.

Under Reamed Piles : This technique was used in 'A' type low-cost houses constructed in Sector 1 of Vashi node. It is suitable for lightweight structures. In case of availability of weak soil up to depth of 2.0 mt. especially for cohesive soils, this technique is used. While concrete bulb prevents settlement and upliftment of piles due to key anchorage, the enlarged bulb has advantage in permitting shorter piles.

Lime Piles : The piles are used in a marine clay region. It is observed that bulb formation becomes difficult particularly if the soil is fully saturated. In the absence of bulb, the pile acts like straight bore end-bearing piles. The piles of 100 and 150 mm diameters at one meter centre to centre were used for sites and services structure construction of Vashi where the marine clay layer was about 3 metre thick.

The pile involves boring a suitable diameter hole and fill in it with anhydrite fat lime mixed with sand (5% fat lime) and then adding water. When the lime comes in contact with water, slaked lime and water form grout. When the grout comes in contact with clay, it results in alteration of the water film surrounding the clay minerals, the calcium divalent binds the soil parades close together which in turn decreases plasticity making the structure more open and granular; it coagulates soil particles which finally increases strength.

It has been used successfully for sites and service houses in Vashi, Sector 2. This technique is used for lightweight and low-cost structures. It improves soil properties, especially of compressible soil in coastal areas. Lime in the pile portion penetrates in the soil of adjoining areas and changes its properties. More penetration is observed in the coastal region having low water table with tidal effect.

RCC multi-tier Vierendeel frame : At places in Navi Mumbai, the marine clay depth exceeds even 15 metres. This resulted in foundation cost to exceed 50% of total cost of structure which naturally made low rise structures expensive and unaffordable. In order to take care of the situation, single and multi-tier RCC Vierendeel is used in place of conventional RCC frame. The Vierendeel enabled increased piles spacing up to 12 mt., but the columns spacing in superstructure remained same as in conventional frame.

Embankment Foundation : As a part of development embankments for road, dykes were required to be constructed in some cases where marine clay is near fluid strata. Such soil would start flowing as soon as a layer of Murom is dumped. Depending on the clay and soil moisture, the flow can be immediately protracted in one or two days. Making of sand/band drains is also found to be impossible. Only way is to go on dumping the Murom up to a point when it displays major clay and thus gets stabilized. This involves huge quality of Murom. Then geo-net in cellular form is laid and cells are filled with Murom to form second layer. In this way, three layers are laid and then regular embankment is constructed on the top with a side slope of 1:2 to 1:3. This embankment or dyke stands longer.

The conventional sand drains are provided for draining of soil water so that the soil can consolidate to avoid settlement after application of load. So the drains are provided generally to facilitate radial flow of soil moisture. In case of marine clay, soils drains are far different from surrounding clayey soil and so the sand drain behaves more like a granular or stone column.

MEDIUM LOAD FOUNDATION

Medium intensity loads can cause immediate shear failure and long-term settlement. But the gain in shear strength is sufficient to support the load in ultimate stage.

Encased Stone Columns : It is formed by inserting circular open polyurethane or similar nets in the form of grid in pre-bored hole which is then filled in with suitable graded stone meal or aggregate. So formed pile or stone column, when loaded from top, starts inflating like balloon and in turn exerts pressure on surrounding clay which in turn exerts vertically upward stress on footing.

The footing transfers the load onto the stone columns due to which it gets compressed and a bulb is formed which imposes pressure on surrounding soil — the vertical component of which shares some load. Thus the load is borne by the soil and stone columns both together. The share of each one is decided by deformation character of each one.

Granular Columns : Columns are tested to verify the above assumption. The test confirms the above action and interactive load support mechanism. The interactive stone column foundation based on the above principles is designed and constructed for supporting seven box culverts in Dronagiri node. It is seen that the culverts have not shown any settlement after 7 years, though the stone columns are not resting on rock and depth of clay is about 10 mt.

HEAVY LOAD FOUNDATION

Traditionally heavy loads, particularly in case of multi-storied building structures, are supported on pile foundations. The same pattern of design is adopted for foundations on deep marine clay layers. But in case of deep marine clays, the pile foundation encounters some problems. The problems are created by sulphates in soil or highly corrosive ground water. The physical damage to the piles is caused from dynamic lateral load created by imposed vertical heavy load in nearby area. In order to avoid these problems, it is better to adopt well foundations instead of pile foundations. The sinking of well in marine clay is technically and relatively simple and environment-friendly. The hollow portion below ground level can be used for water harvesting. The superstructure can be constructed above the well foundations.

SUPER STRUCTURE FOR BUILDINGS

Composite load-bearing structure transfers load from upper level to lower level and reduces size of masonry in load-bearing walls with Mullions technique. It breaks continuity of masonry and increases stiffness. It is advantageous for multi-storey buildings. E type houses in Vashi Sector-1 are built with this technique. It increases stiffness and reduces length/radius (L/R) ratio. However, quality control is a rigid process in this kind of construction as it increases number of activities and trades.

Perma Form Method : It's a time-saving method. It has been used for the telephone exchange building at CBD Belapur, Sector 11. Architectural and structural design, tendering and construction was to be completed in just three months. In order to shorten the period, pile testing was done by ultrasonic method ensuring additional factor of safety. Slab was supported on steel structure and G.I. sheet permanent form. This facilitated simultaneous plastering, flooring and slab concreting. Design and tendering processes were also executed together. Thus the work was finished within stipulated time; moreover it did not escalate the cost much as compared to conventional method.

Concrete Block Masonry : This technology replaces clay bricks. It was used for mass housing in Nerul, Sector 16 for the first time. It has an advantage of on-site manufacturing by machine with accurate required size. Reliable strength, fine finish and better quality control are added advantages. It is cost effective as use of thinner blocks gives more carpet area in room. Blocks are manufactured using cement, sand, shingle (coarse sand) metal, grit, stone dust, etc. It can be used for load-bearing or non-load bearing, solid or hollow concrete blocks as per requirement and design.

Vierendeel Girder : Developed by Prof. Arthur Vierendeel and named after him, it uses rigid frame with open web girders having rigid joints, comprising of top and bottom chord with vertical members between the top and bottom booms. Diagonal members are eliminated and stability depends on the rigidity of joints where hard strata is available at 20.0 mt. depth. This technique was adopted in Dronagiri Guesthouse. It helps reduce number of piles and saves foundation cost; however, it is extremely sensitive to differential settlement.

Siporex : It has been used for mass housing project in Sector-4 of Airoli node. Siporex can be used as building blocks, roof and floor slabs and partition walls. Siporex is versatile. It can be cut and shaped like wood, simplifies plumbing, electric work, fixing joinery, etc. It prevents wastages at site and eliminates use of timber and bricks, hence is environment friendly. It reduces cost of structural components like columns and beams due to lightweight. Used in lightweight construction, it is corrosion resistant, water repellent. It has better insulation properties. It also increases carpet area due to lesser thickness, etc. However, it is critical for construction management for increased number of activities.

Prefab Panels : D type houses (G+5) in Vashi constructed in 1973 are prefabricated structures. Substructure up to plinth level was with cast-in-situ piles and grid beams and superstructure with Prefab technique having large pre-cast, pre-fabricated panels of walls, slabs and staircases. Hollow external wall panel, grooved and projected joints make the structure absolutely waterproof and economical in the consumption of cement and steel. Large gantry was erected to lift precast panels and to make faster construction. Chemical admixtures were also used for early setting of concrete and to enable early deshuttering.

Precast Channel : This type of structure has been successfully used for NL-5 type building in Nerul, Sector 4. Precast channel is a thin channel element of length equal to width of room. It is used in load-bearing structures where shuttering work at site can be completely eliminated. It ensures faster construction. Excellent quality control can be achieved as it can be cast in factory or at site. However it poses waterproofing problem and is also critical for construction management.

Tubular Roof : Structural tubing is preferred to other steel members when resistance to torsion is required. It provides smooth, closed section and is aesthetically desirable. It is also economical for use of compression members subjected to moderate or light loads. It has been used in the construction of Janata Market, Sector 4, Airoli.

Precast Construction Technology

Tunnel Form Shuttering : Thin concrete wall is constructed with the use of special type of shuttering. Full room size form is used to construct wall and slabs in one continuous pour of concrete. These forms afford large number of repetitions and help in its earlier removal by hot air curing compounds. It helps construct large number of houses in time. Ensuring uniform quality and faster completion, it offers higher carpet area. It has less joints and therefore is more seismic resistant. It has increased durability, reduction in leakage and maintenance. It is used in Mass Housing project, Sanpada.

MIVAN System : This Aluminum lightweight form work technology was used for the low-cost housing project in Ghansoli, Sector-7. The system, designed and manufactured in Malaysia, is versatile as it can be manufactured to form any architectural feature or structural configuration including stairs, Bay Windows, Curved features.

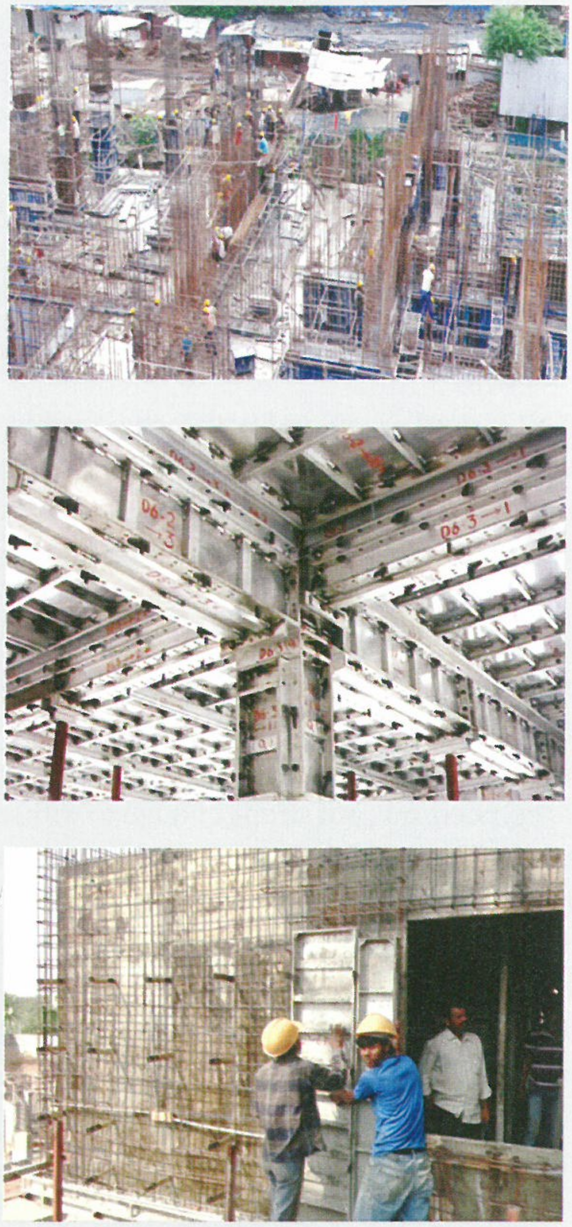
The MIVAN system is an industrial engineering approach to the formation of concrete structures. It can be applied to any major project that involves volume production of repetitive elements. It does not require cranes to lift heavy equipments, does not require skilled labour and can be adopted in 10 different designs. It makes removal of floor slab forms possible without moving props.

The system involves monolithic pouring of slabs, walls and all other structural elements, including the Central Core. It is a set of form work panels, precision engineered from aluminum alloy and connected together to lightweight up to 20 kg. per q. mt., but strong enough to withstand pressure of up to 8 tonnes per sq. mt. The panels are connected by simple pins and wedges, which also serves to connect the wall ties. Slab panels are supported by aluminum props positioned at shore spans to minimize the risk of deflection. The prop heads are specially designed in a 'V shape' to allow the removal of the slab panels as early as possible. The slab beams are dropped out whilst the props remain in place, until the concrete has obtained adequate strength.

However, in the technology internal walls do not show perfect-formed finish, due to vertical joints as size of wall panel is very small. However, this problem can be solved by finishing of the wall by rendering/grinding.

MAKING ROADS STRONGER

The urban roads deteriorate faster. They hardly stand the onslaught of one monsoon. The sight of roads designed for 5 or 10 years life and constructed using conventional specifications, getting damaged with the first shower of



Innovative construction technologies made housing affordable monsoon is not uncommon particularly for urban roads and for flexible pavements. The failures are mostly due to either structural weakening of pavement, or due to heavy loads. The structural weakening of crust can be the result of normal wear and tear which can cause erosion/stripping of asphalt, breakage of crust granular material, loss of granular particles in sub-grade, etc.

The urban roads are generally positioned at lower level than the surrounding plot levels and act as drainage channels in monsoon. This more often causes saturation of WBM layers. The urban roads are also serving as a storage area for construction materials, which results in choking of drainage channels, thus creating aggressive environment. The roadside trees also add to damage of pavement. Thus flexible pavements are not able to sustain such multifarious attack and naturally give away.

In providing solution to the perennial problem, CIDCO engineers used innovative methods of using granular base materials that are most efficient in absorbing traffic loads. The mechanism involved for stress distribution within granular material is structurally as efficient as the shell of an egg. All particles in the layer are in a state of incipient motion.

The stiffness given by geo-cell to the granular crust is compatible with asphaltic layer. The compatibility can prevent tensile stresses developed at the interface of asphaltic layer and granular layer. The granular layer with geo-cell can be porous and hence permeable to allow free movement of water as loss of denseness is taken care of by geo-cell as far as strength is concerned. Thus the loss of bearing capacity of pavement due to moisture contact is taken care of. It also permits larger particle to be used to get advantage of strength offered. The mechanical interlocking offered also increases value and hence the bearing capacity, which is maintained in saturated state under lubricating, affects soil particles also.

The layered construction is disadvantageous as it requires costly layers to be added for intrinsic strength to bridge over the weaknesses of sub-grade in between it to take care of underground water, capillary, etc. Geo-cell as tension member can also take care of sub-grade and crust character. Geo-cell acts as a stabilizer of sub-grade geo-cell for testing value of granular material.

Road Crust : The road crust, unlike present multipurpose multi-layered crust has only three components – surfacing, structural core and separation layer at bottom. The structural layer transfers appropriate intensity of stress to sub-grade and absorbs balance stress in itself. It should also take care of variation in sub-grade properties by acting as a tension layer and it should be able to rotate the yield lines in sub-grade so as to ensure stability of sub-grade. The geo-cell is designed for reduced strength of crust and sub-grade over desired years and for estimated increased wheel load. At the end of design life, the crust can be strengthened by addition of stiff layer or by replacing entire crust by new one. This will be cost-effective and structurally logical solution.

Laying of Geo-Cell : Geo-cells are made out of geo-net or geo-grids. The net or grids are cut off in strips width of desired depth of cell. These are then erected on prepared sub-grade in zigzag pattern. Then the meeting points or nodes of two walls are tied with similar material. Then the cellls are filled with granular material. The filling is done first in alternate cells. The remaining cells are then filled in second round. The material is filled one layer above top of wall and then rolled with tired vibratory roller. Then bitumen grout is provided after which surfacing coat is laid. Geo-cell materials – Geo-fabric – natural or synthetic, woven or non-woven geo-grid or geo-net are used for wall. It is easier to lay vertically the walls of stiffer material. The resulting geo-cell shall have compatible deformation characteristic and modulus with bituminous surfacing layer at top.

LESSONS FROM MUMBAI FLOODING

Planners had a lesson in Mumbai. The historic island city took its shape what it is today, over the years after reclaiming land from the sea. This resulted in storm water flooding being a Mumbai phenomenon for years. With no permanent solution in site, Mumbaiites have come to terms with the situation and are now used to it. Navi Mumbai planners gave a curious thought to this perennial problem before initiating the development of the city.

Storm is an inevitable part of water cycle. It releases water and energy in uncontrolled manner causing destruction. Complete protection from floods is impossible, as floods are stochastically variable in time and space. Water is carrier of life and energy for all living beings. Yet leaving life at the mercy or fury of nature is inhuman. Therefore Storm Management, a system to plan desired level of protection from probable occurrence of certain level of floods, to protect human habitat and environment from floods treating the natural resources.

Yet another reason of flooding in urban areas is inadequate attention to drain morphology – drain configuration, geometry of layout and with longitudinal profile that give character to flow which can be laminar or turbulent, steady uniform flow, steady non-uniform flow, unsteady flow, rapidly varied flow or gradually varied flow and sub-critical flow or supercritical flow. Moreover, there can be curvilinear path to flow and there can be 'T' junction, 'Y' junction of drains, which can also result in one of the above characteristic flows. The flow characteristic helps in dissipating available total energy.

The floods in NM taught the planners not to let meet at right angles two super-critical flows, or not to allow a submerged channel meet primary channel on convex side of curve because the depth of convex side is more due to super-elevation effect – Similarly a junction is required to be designed to achieve gradual transformation into resulting flow. Thus a shallow drain at the end of steep drain can cause flooding transition. The meeting of flow from opposite direction results in a phenomenon called "Bore". The topography of terrain defines the geometric design and careful planning is required to decide whether to allow submerged flow or steeped channels.

This also increases shifting problems and hence maintenance cost, ultimately making the system unsustainable both physically and financially. The foreign bodies like electric cables, various pipes, etc. make die drain hydraulogically inefficient. In between, stabilizing ponds can take care of complicated hydraulic situation. The storm water transportation receives least attention and area-wise preplanning which is required is generally not done. A hydraulic physical model of drainage system can go a long way in improving the efficiency. An instrumentation of existing drainage system can go a long way in understanding of die system hydraulics.

MANAGING STORM WATER

The development plan for Navi Mumbai envisaged reclamation of some of the low-lying areas under tidal submergence for development purposes. The land is reclaimed in every node. In the early stages of development, each node was planned of smaller size which was then extended as need arose, so the design of storm water was extended from part to whole against the design principle of going from whole to part.

This happened in almost every node and most glaringly in Kalamboli and Nerul. Naturally such extensions resulted in extension of discharge points. The discharge point in Nerul got extended by about 175-km downstream side. The extension naturally resulted in upward shifting of hydraulic grade line by about 0.7 mt. Such rise would have caused flooding in the area already developed. Hence it was decided to create hydraulic structure which will allow zero hydraulic gradient of water into holding pond in extended channel.

The diversion channels were planned to directly discharge storm water from high level industrial area to creek without interfering with polder drainage system. The high water level in the channels is higher than polder ground surface level. Thus polders are protected by dykes. Mostly the channels divide die polders. These channels run across ridgelines from top of hill to die creek and lead to formation of corridors with greenery around. The corridors are called 'Woodland Corridors' which form a feature of the storm water management.

In the planning of reclamation system, historical urban storm management criteria was used. The criteria stipulates to dispose the storm water as soon as much can be done outside the area concerned, so that the area remains dry and devoid of water. This leads to unsustainable development as it requires huge power supply, huge reservation of land for ponds, huge channels. Thus expenses to have flood-free urban area are equivalent to flood damage!

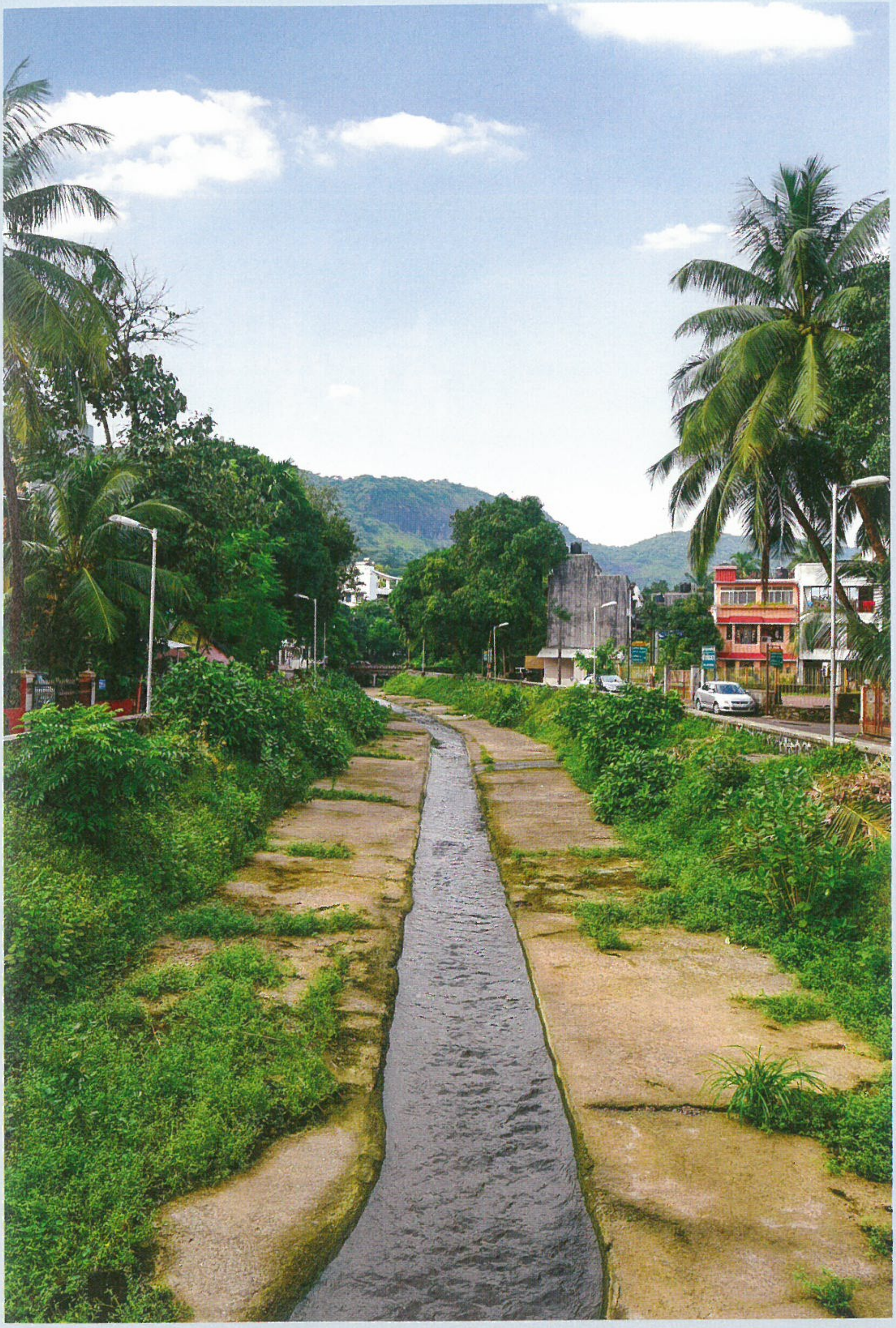
Two methods are implied to reclaim the land. The first one involves raising the low-lying lands by earth filling. Extent of fill is decided by keeping high water level of the storm water system just above the high tide level and the channels are laid to slopes to attain self-cleansing velocity.

In the second method, construction of bunds (dykes) rising above high-tide level to block the entry of tide water on the area to be developed is required. Area is given to adequate slopes for surface run-off and given a good soil topping to provide comfortable working surface. Since level of ground remains lower than the high-tide level, the storm run-off cannot flow into the sea by gravity except when the tide level is lower than water level in the drainage system of the area. It is therefore necessary to resort to either pumping system or providing sufficient holding capacity to store the storm water during higher tide levels and discharge it as tide recedes.

EVOLUTION OF THE SYSTEM

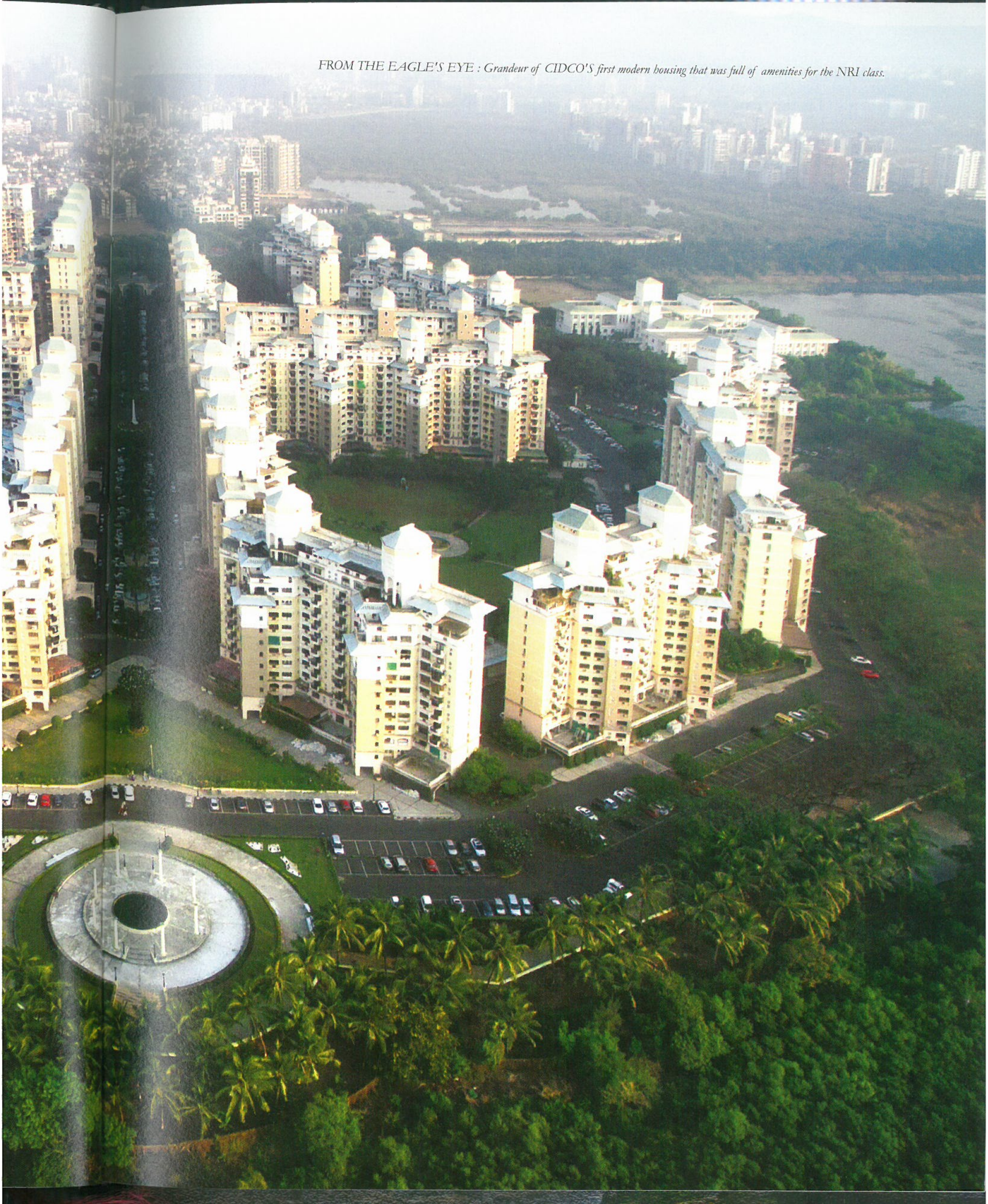
As a part of storm water management system for Navi Mumbai, following interesting hydraulic structures were created which ultimately are useful for harvesting of storm water.

Holding Pond : The criteria stated above were further extended to the major drainage channel passing through Navi Mumbai area and meeting the Thane Creek. The channel known as Panvel Creek carries storm water from 374 km2 area and at peak storm carries 2543 mm3 per second storm discharge. This resulted in flooding of old developed area as well as new development. So the concept of detention pond was extended to regulate this natural channel also.



CENTRAL CHANNEL : *This overflowing channel in Artist Village has been created within the pond to ensure that it holds water if and when the river water level exceeds.*

FROM THE EAGLE'S EYE : *Grandeur of CIDCO'S first modern housing that was full of amenities for the NRI class.*



Detention Ponds : The detention pond was so designed that the natural channel with the capacity of carrying storm water of 2 years frequency is retained, i.e. at the peak storm, the water permitted to discharge through the channel is only to the extent of two retained period storm. This requires planning of 3 reservoirs of three natural channels. It is seen that the reservoir capacity required controlling the floods so as to pass only two years retain period is 158 mm covering an area of 2,665 km^2.

The detention ponds and holding ponds occupy considerable area which would have been otherwise useful for urban development. There is a proposal to use favourable geological formations to store the water underground if necessary by reasoning to artificial recharging methods. This water then can be used to supplement city water supplies. Further imaginative uses of water bodies are possible like use of channels for local transportation which can be fuel efficient and hence eco-friendly urban transport system.

The feasibility of using this water for municipal water supply was checked and it was found that with an additional storage capacity of 263 mm^3, water supply of 719 MLD could be made available in addition to the flood attenuation. The additional cost involved is only to the tune of ₹ 8.14 per MLD as against the cost of ₹ 566.40 per MLD for creation of reservoir for water supply purpose. This concept can be extended to Mumbai far partial controlling of floods.

Thus a unique urban form ushering the age of nature-human partnership was resulted leading to eco-friendly urbanisation contrary to general belief that urbanisation is an enemy of environment. The system has been managed with reference to urban development for preventing damage to on-site and off-site property, loss of life due to infrequent or unusual storm simultaneously making use of system as resource of urbanisation.

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CHAPTER XIV

PARTNERS IN PROGRESS

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Partners in Progress

Economic growth without investment in
human development is unsustainable and unethical
-Amartya Sen

WELFARE STATE

While developing the city of Navi Mumbai, CIDCO applied all the basic parameters of urban planning on one hand and on the other hand it followed the principles of the Welfare State imbibed in the Constitution of India. CIDCO represents the Government of Maharashtra and acts on its behalf fulfilling the responsibilities as specified in the Preamble that says, 'we (the People of India) solemnly resolve to secure to all its citizens Justice, Liberty, Equality, Fraternity and Integrity of the nation.'

It was with this view CIDCO, since its inception, did some special planning for the sons of the soil of Navi Mumbai. Having considered that, the aborigines are the people who are likely to be affected – therefore they are commonly known as the Project Affected People (PAPs) – with the initiation of the development, by losing the land, main source of livelihood and by getting exposed to the lifestyle and the culture that is alien to them, meticulous and constant endeavours have been taken for the socio-cultural upliftment of sons of the soil. CIDCO also ensured that the PAPs adapt to the lifestyles of a modern city.

While the physical and social growth in Navi Mumbai is easily visible, overall development of the PAPs is the undercurrent, like the Saraswati of the

Triveni confluence. The entire development of this new city was consciously done to give full justice, equality and fraternity. Extra efforts were taken to see to it that the PAPs remain in the national mainstream. Established as the company, it performed the duties of the local self-government sans elected representative. The board of directors worked as the cabinet.

CIDCO's contribution in developing local human resources included educating the PAP children, giving job-oriented training to illiterates and imparting technical training to semi-literates. This was besides the 'Land for Land compensation' more popularly known as 12.5% scheme, considered the rational model for development projects. In the due course of time, it has resulted in the PAPs'socio-economic development.

The Project Affected Persons (PAPs) of Navi Mumbai in due course of time have turned partners of the progress as the benefits of the balanced development have appropriately reached them over the years. The findings of the 'Socio-demographic and Economic Profile Survey' are the testimony of this.

STIPEND FOR STUDENTS

CIDCO started paying the stipend from 1973 to the wards of PAPs going to schools and colleges to encourage them to take up education. The students getting technical training were paid ₹ 140 per month and college students were given ₹ 200 per month as stipend. The percentage of PAP wards taking up education above 10th standard was hardly 5 to 10%, whereas after starting stipend scheme, it almost went up to 95%. The beneficiaries were mainly from the age group of 16 to 22 years.[1] In all 10,841 students going to college or taking ITI training were given stipend.

The Corporation offered grant-in-aid for constructing college building and infrastructure like books for library and equipments for laboratory, furniture and fixtures. Till 1995, in 57 villages 467 rooms for primary schools were constructed and 71 rooms were constructed in 12 secondary schools.

Under the Gaothan improvement program, CIDCO started key infrastructure works in the Gaothan areas of the villages and padas situated within CIDCO area. These works are taken up with the objective of improving the quality of life of the villagers. These include roads, toilet blocks, cremation grounds, development of playgrounds etc. In 56 villages, 244 toilet blocks were constructed, 16 community centres, 4 gram panchayat offices and 24 dhobi ghat or common village ponds to wash clothes were built, one in every village till 1995.[2]

VOCATIONAL TRAINING

It was necessary to educate the young generation that formed the backbone of the then existing society to cope up with the future. CIDCO gave vocational training for educated youth to get employment. The PAP students who were unable to take up higher education due to financial or any other reasons were given the option of short-term technical courses. They were facilitated to start their own business after acquiring technical training in trades like wielder, fitter, wireman, TV and radio technicians, etc. Initially technical training centres were set up for basic courses in various technical trades and vocations.

Till March 2002, PAPs trained in trades such as Auto Electrician, Carpentry, Electrician, Mechanical Draftsmen, Instrumental Mechanic, Fitter, Machinist, Mechanical Die-maker, Motor Mechanic, Moulder, Spray Painting, Radio Servicing, Surveyor, Printing and Press, Welder, Gas-cutter, Wireman, Motor Winder, Automotive Mechanic, Driver, Tailoring, Air-conditioning and Plumber.[3]

PROVIDING INCOME SOURCES

CIDCO created alternative sources of income for local unskilled and uneducated labourers and youth by providing petty loan to start small business of pan-bidi shop, grocery shop, milk shop, etc.; providing stalls to start small business, up to ₹ 2.00 lakhs loan was given to take up small contract of garden maintenance, road cleaning and garbage collection, etc. Many PAPs have become big and medium size contractors. Alternative source of income was provided to fishermen's co-operative societies by giving holding ponds on leave and licence basis for fishing. The licences were given to societies formed by PAPs. CIDCO also provided quarry licence to PAPs.

Placement cells were opened to provide direct permanent employment. CIDCO used to maintain data of educated unemployment PAPs to provide them government, semi-government, private sector employment in different organisations. Over 2,000 PAPs got jobs in different establishments such as CIDCO (666), BEST (238), BMTC (649), Private Sector and other (470). CIDCO gave direct employment to nearly 7,000 PAPs, before the PAP placement cell was closed down in 1981.[4] Later CIDCO accorded preference in employment to PAPs in the projects started on CIDCO land. These efforts helped local PAPs to raise their financial, educational and social standard of living. It helped them to assimilate in urban environment and compete with them.

FACTUALLY SPEAKING

CIDCO, since 1975 conducted Socio-Economic Surveys of households in Navi Mumbai at regular intervals, i.e. 1975, 1979, 1983, 1987, 1990, 1995, 2005 and 2010. The first four surveys conducted during the first two decades of Navi Mumbai mainly aimed at planning housing needs and deciding future course of action in the city development.

SR. NO.	PARAMETERS	1991 CENSUS	2001 CENSUS	2011 CENSUS
1	Population Growth	11.40%	10.62%	8.66%
2	Place of Origin	Maha. 59%	NA	Maha. 73.4%
3	Literacy Rate	94% M: NA / F: NA	M: NA /F: NA 98%	96% M: 99% /F: 97%
4	Graduates & PG	17.07%	27%	34%
5	Up to HSC	42%	54%	NA
6	Medium of Instruction	Eng 60% Mar 27% Hindi 0.1%	--- --- ---	Eng. 76% Mar. 21% Hindi 2%
7	Avg. Family Size	4.01	4.05	3.7
8	Earning members	1.35	NA	1.3
9	Household Income	Rs. 4,708	RS. 9549	Rs. 24,686
10	Household Exp.	NA	NA	Rs. 16,496
11	Vehicle Ownership	10%	NA	64%

Source: Socio-economic Surveys conducted in 1990, 1995, 2005 and 2010

Surveys conducted by different agencies, i.e. 1990 (CIDCO), 1995 (TISS), 2005 and 2010 (Kirloskar Consultants) had identical parameters as they were aimed at analysing the overall development in Navi Mumbai. Findings of 1990, 1995, 2005 and 2010 surveys corroborate the development in Navi Mumbai was on the right path in all spheres keeping in mind the objectives CIDCO was formed for.

EMERGENCE OF NEO-RICHCLASS

Increase in the household income and ownership of vehicles show that the standard of living is rising in the city. Majority of the vehicle owners are the PAPs, this again gave credence to the theory that a new-rich class has emerged amongst the sons of the soil who got back developed plots under the 12% scheme for compensation. The findings of the Socio-demographic and Economic Profile of the PAPs corroborate this.

During the period the Government Census was conducted in 1971, 1981 and 1991, the findings of the surveys and census show overall annual population growth of 15% between 1971 and 1995. Accumulative growth of population between 1981 and 2011 shows rise of 61.36%. However, in the period of 2000-2005, it dropped by almost 3%. In the next five years, it again went up by 1%. Real Estate market played a decisive role in the fluctuation. The rise in prices put a major hurdle in the middle and lower-middle class' decision to relocate to Navi Mumbai.

In the education sector, CIDCO's efforts to educate PAPs and creating better academic facilities in the city paid off as during 1995 and 2005 literacy rate ascended by 4% and remained the same in the next five years. Upward trend in undergraduates and graduates (including postgraduates) only substantiate the facts. It is noteworthy and promising that the majority of the young generation (this includes the PAPs too) opted for English medium schools.

DEVELOPING HUMAN RESOURCES

A new dawn for the PAPs arose on the horizon of Navi Mumbai with the CIDCO gearing up for the Navi Mumbai International Airport. Smt. V. Radha, who joined CIDCO in May 2013 as the Joint Managing Director took up the charge of the situation and went to the root cause of the PAPs issues. She started with the unique programme of village visit – Gram Bhet. In her first visit to Pargaon on 22 June 2013, she directly mingled with the villagers understanding their issues. She adopted the principle of encountering the problem personally and directly. This was one of the 10 villages that fell in the core area of the proposed airport. Around 3,500 villages were to be displaced.

She gave priority to elevate the standard of living of the young generation of airport PAPs, as economic prosperity alone was not enough to sustain overall development of the PAPs.

A survey of the PAP youth was done with the help of Tata Institute of Social Sciences (TISS) for the better insight of their psyche. Over 3,000 youth were surveyed.

Based on its outcome, a thorough plan was chalked out for the PAP youth so that they get more employment opportunities. A Vocational Training Center at Khandeshwar was established and was named after the leader of PAPs, late D. B. Patil. It imparted career guidance, skill development training as well as training for competitive examinations such as IAS, IPS, MPSC and UPSC.

This centre collaborated with the National Institute of Fashion Technology (NIFT) and sought help to design a special course for PAP girls and women. NIFT then gave three-month training in fashion technology to 49 women in two batches. CIDCO shared the cost with NIFT at 40-60% ratio. Till 31st May 2015, the centre also trained 51 candidates for entrepreneurship development, 59 girls for beauty and wellness through LabourNet.[5] CIDCO appointed three private agencies to facilitate direct placement.

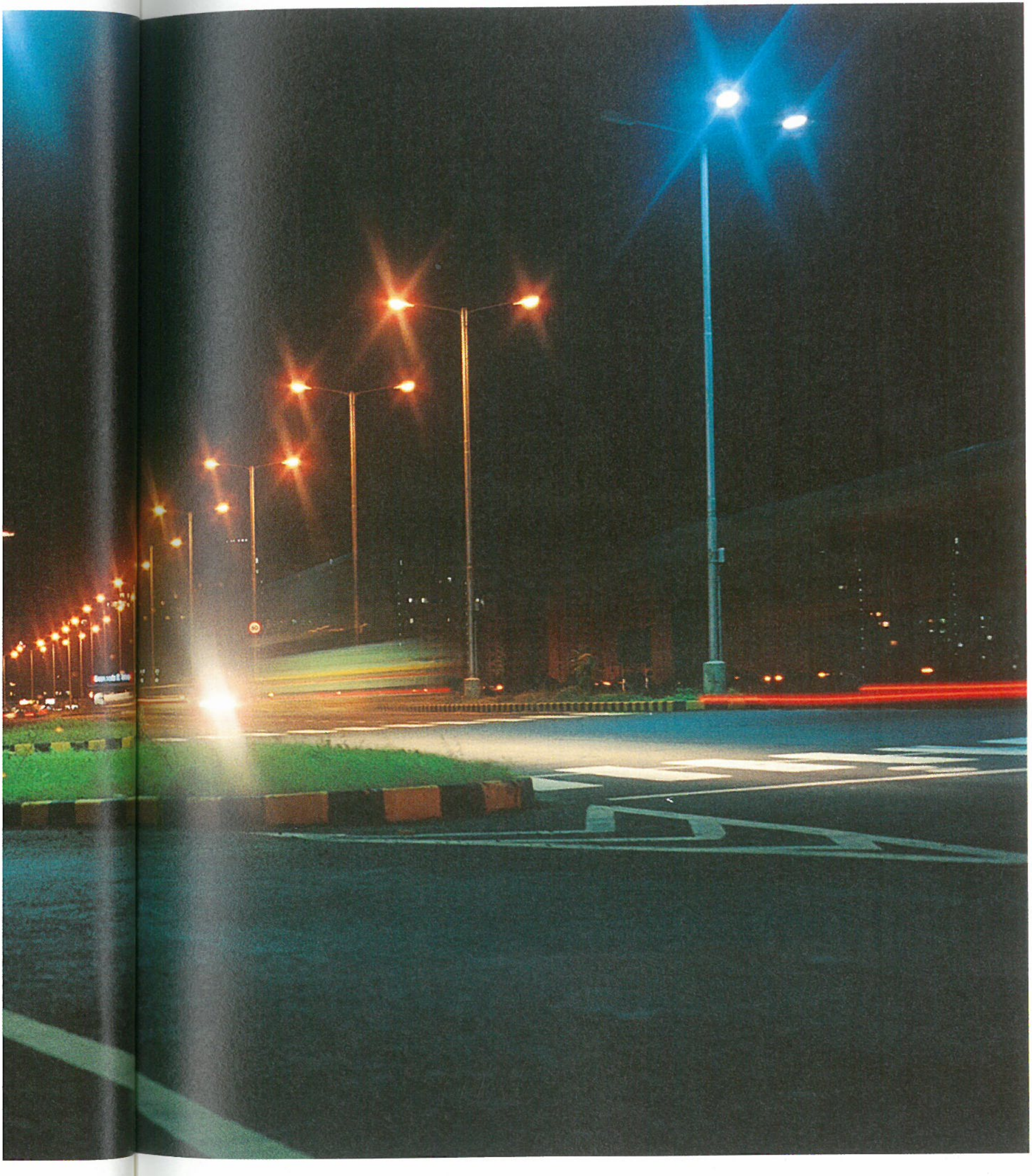
Shilpa Urankar, a commerce graduate, is the first beneficiary of the CIDCO's direct placement service to get job in Aura Diamonds at Santacruz, Mumbai. The directorial board also adopted a policy to give financial aid to the meritorious PAP students for higher studies. Pradnya Patil is the first PAP girl to get admission at the Indian Institute of Management, Ahmedabad. CIDCO bore all the academic expenses for her to complete the studies in one of the nationally acclaimed institute.

On 15th August 2014, PAP Training Centre at Belapur Railway Station Complex for the young generation of the PAPs was established with a view to making them withstand the competition in the job market, uplift their standard of living and enhance their requisite knowledge as well as skills. CIDCO appointed IL&FS Skills Development Corporation (IL&FS Skills), India's largest vocational training company on 15th September 2015 as an anchor agency to implement various training courses for the PAP youth.

IL & FS initiatives were aimed at Transformative Action for Rurban Advancement (TARA). Community Mobilization (CM) and Information Education and Counselling (IEC) are the fundamental activities of the agency directed towards: Skill Development for Employment/Self-Employment, Coaching for Competitive Examinations, Entrepreneurship Development Programme (EDP) for Women, Aviation Academy, Port & Logistics Academy and Construction Academy. These initiatives have been taken up in association with the National Skill Development Corporation.

During the Ganesha idol-making from Shadu clay course held between 2nd and 16th August 2016, 22 women from Bangarpada village were trained. Most of the idols were sold in the exhibition-cum-sale held on 23rd August 2016 at the ground floor, Belapur Railway Station Complex. Under the Assistant Beauty Therapist, 24 girls were trained at the CIDCO-TARA Skill Development Centre Training that was held between 13th October 2016 to 30thJanuary 2017. Candidates were assessed by NSDC on 2nd February 2017. Training for the fancy cloth bag-making was given to 21 women from 1st December 2016 to 21st December 2016. Imitation Jewellery-making course was held from 22nd December 2016 to 12th January 2017 in which 21 candidates were trained.

SCINTILLATING STREETLIGHT : Delighful illumination on Kharghar streets.



R&R FOR AIRPORT PAPS

Unlike the project of Navi Mumbai City where quite a few PAPs were displaced, in the Navi Mumbai Airport project 3,500 PAPs of 10 villages are required to be shifted. The protest of these villagers' was natural. Vice President and Managing Director Sanjay Bhatia took the stand of winning over the hearts of airport PAPs' rather than acquiring their land by force. He gave the patient hearing to the PAPs and resolving their problems. His positive, considerate and sympathetic approach convinced them and their ire was calmed down.

The Corporation drafted a policy in accordance with the guidelines of the Central and State Government to offer the best package. The package proposed 22.5% developed land in the place of their acquired land to be given back, adding 10% more to the PAPs of the Navi Mumbai City project. For the compensated land, they would get 1.0 Floor Space Index (FSI) for 12.5 per cent of developed land and 2.5 FSI for another 10 per cent. The package also includes some unique features. It gives the PAPs 100 shares of the company that would develop the airport. Farmers will get land, triple the size of their home, to construct a new house. Besides, it also provides vocational training to the PAPs wards to get jobs.

A committee was constituted on May 2011 under the Chairmanship of Divisional Commissioner, Konkan Division, to finalise Rehabilitation and Resettlement package and land acquisition. CIDCO made presentation to the Chief Minister Prithviraj Chavan on 6th February 2013 on the proposed land acquisition model for NMIA. The State Government approved the Navi Mumbai Airport Land Acquisition, R&R package and allied activities in March. Delegation of the airport PAPs also attended the meeting. The Chief Minister called a meeting of the concerned high-level officials and representatives of airport PAPs to discuss the land acquisition model and R&R policy entitlements on 11th November2013; the PAPs agreed the package. The State Government in May 2014 also approved the R&R package for persons residing on government land in airport core area.

An entirely new township called Pushpak Nagar will be developed for the PAPs with adequate infrastructure at Dapoli. The plots under 22.5% scheme were earmarked to the PAPs through the fully-transparent computerized draw. For the draw conducted in the presence of local dignitaries, the software certified by STQC Pune-based Central Government-affiliated organisation was used. The first lottery for allotment of 22.5% plots in Pushpak Nagar to land owners in airport project area was conducted in August 2014 and in September, the second one was conducted.

ENRICHING ART & CULTURE

CIDCO built a theatre with modern acoustics dedicated for stage performances in Vashi. Inaugurated on 13th May 1997, it was named after the pioneer of Marathi theatre Vishnudas Bhave, who staged the first drama 'Seeta Swayamwar' in 1843 and later earned the reputation as playwright, director and actor-singer. Constructed on 5472.50 sq. mt., it has the capacity of 1000 seats. The ground plush 3-floor structure has residential facility for artists.

Agri and Koli, the aborigine communities of Navi Mumbai have a rich cultural heritage. Music and dance are the inevitable factors of their socio-cultural events. In the matriarchal family system practiced in the community, women are revered. They handle economy of the family and also perform import rituals in the wedding.

CIDCO constructed Agri Koli Sanskriti Bhavan with a view to nurturing tradition and customs of the sons of the soil. Inaugurated on 13th August 2011, it bolsters ethnicity and identity of the sons of the soil as the community brethrens to hold its traditional programmes. The cultural centre provides facilities such as parking lot and food plaza in Nerul node. Hutatma Bhavan at Dronagiri on the lines of Agri-Koli Bhavan at Nerul and proposed Bhumiputra Bhavan at Ulwe node has been planned.

The Urban Haat, a permanent platform for the local as well as national folk artistes and artisans has been carved out keeping the natural ambience intact in front on the Belapur Railway Station. At the foothills in Kharghar, a huge Central Park has been developed with amphitheatre to flourish the cultural heritage.

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PRESERVING ETHNICITY : *Agri Koli Bhavan is a multipurpose memorial of the culture and tradition of sons of the soil.*

EXHIBITION CENTRE : International Exhibition and Convention Centre developed over 7.41 hectares area in Sector 30A in front of Vashi Railway Station is the state-of-the-art 'Green structure'.

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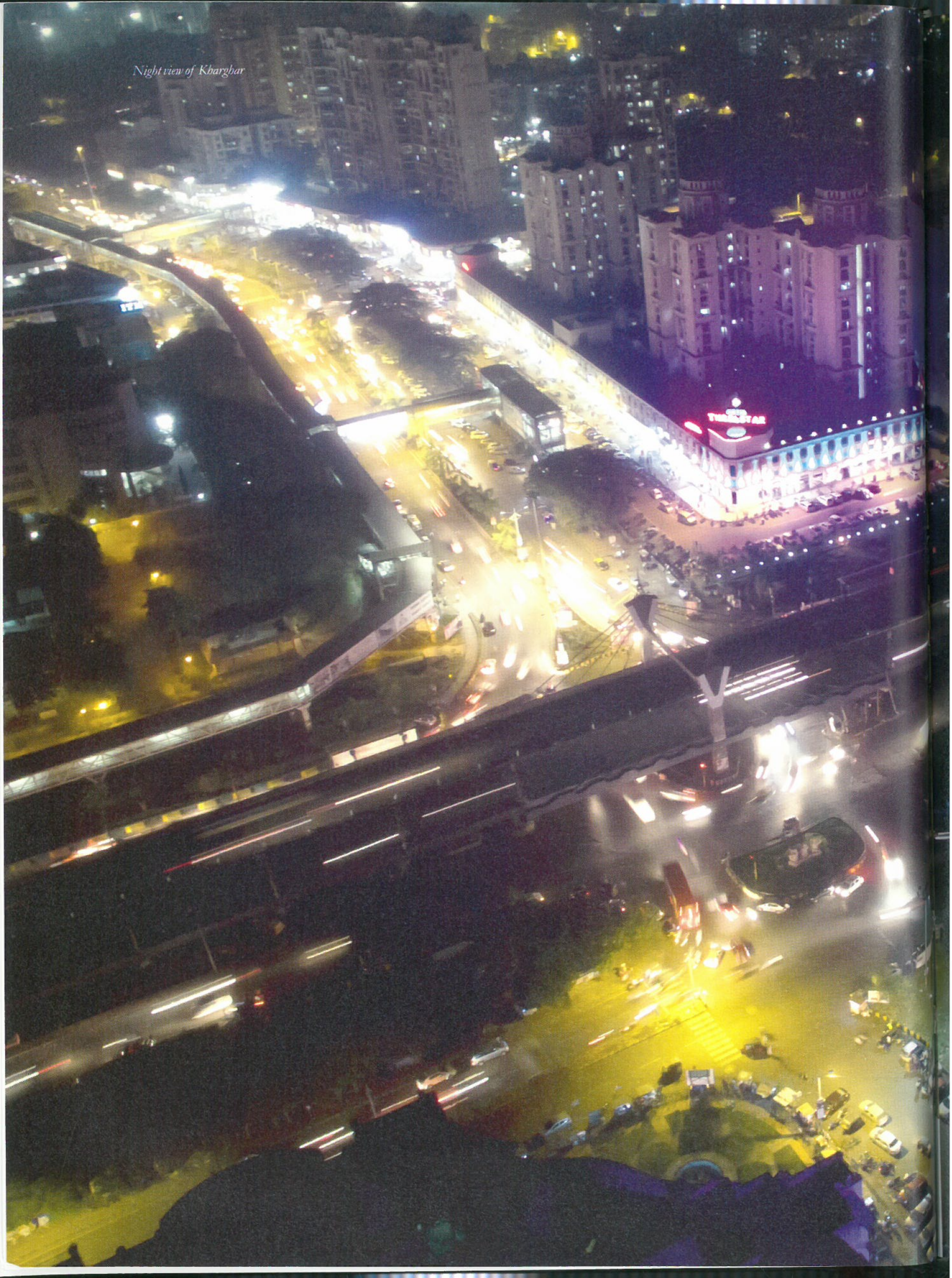
Night view of Kharghar



SR.NO.	ABR.	FULLNAME
1	APMC	Agricultural Produce Market Complex
2	BEST	Bombay Electric Supply and Transportation
3	BMTC	Bombay Metropolitan Transport Corporation
4	BMW	Bavarian Motor Works (Bayerische Motoren Werke AG)
5	BOT	Built Operate and Transfer
6	BPR	Business Process Re-engineering
7	BPT	Bombay Port Trust's
8	CBD	Central Business District
9	COPAS	CIDCO'S Online Plan Approval System
10	CSIA	Chhatrapati Shivaji International Airport
11	CVO	Chief Vigilance Officer
12	DBC	District Business Centre
13	DCR	Development Control Regulations
14	DDP	Draft Development Plan
15	DP	Development Plan
16	EDA	Early Development Area
17	EHVT	Extra-High Voltage Transmission
18	IDP	Interim Development Plan
19	IRCON	Indian Railway Corporation
20	ITC	International Technology Centre
21	JNPT	Jawaharlal Nehru Port Trust
22	MAFCO	Maharashtra Agriculture and Food Processing Corporation
23	MARG	Modern Architectural Research Group
24	mcm	million cubic metres
25	MIAL	Mumbai International Airport Pvt. Ltd
26	MIDC	Maharashtra Industrial Development Corporation
27	MMR	Mumbai Metropolitan Region
28	MMRD	Maharashtra Metropolitan Regional Development

SR.NO.	ABR.	FULLNAME
29	MoCA	Ministry of Civil Aviation
30	MPPA	million passenger per annum
31	MRTP	Maharashtra Regional and Town Planning
32	MRTS	Mass Rapid Transit System
33	NAINA	Navi Mumbai Airport Influenced Notified Area
34	NAZ	Non-Aeronautical Zone
35	NMMC	Navi Mumbai Municipal Corporation
36	NRI	Non-residential Indians
37	NTDA	New Town Development Authority
38	ONGC	Oil and Natural Gas Corporation
39	PMC	Panvel Municipal Corporation
40	PWD	Public Works Department
41	PWP	Peasants and Workers Party
42	RFP	Request for Proposal
43	RFQ	Request for Qualification
44	RITES	Rail India Technical and Economic Services
45	RPZ	Regional Park Zone
46	RTI	Right to Information
47	SAP	Systems, Applications and Products in Data Processing
48	SICOM	State Industrial and Investment Corporation of Maharashtra
49	SPV	Special Purpose Vehicle
50	SUV	Suburban Utility Vehicle/ Sport Utility Vehicle
51	SWM	Storm Water Management
52	TAS	Tata Administrative Services
53	TBIB	Thane-Belapur Industrial Belt
54	TPO	Town Planning Officer
55	TTCA	Trans-Thane Creek Area

FOOTPRINTS OF DEVELOPMENT

APPENDIX - I

ACQUISITION OF LAND

- **1970, 4th February:** The Government of Maharashtra issues notification to acquire 21,857 hectares land of 86 villages from Thane, Uran and Panvel talukas.
- **1972:** The Government acquires 134.53 hectares, villagers voluntarily surrender 511 hectares, 1,582 hectares government land transferred to CIDCO.
- **1973:** 171 hectares acquired, 519 hectares voluntarily surrendered, 2,316 hectares Govt. land transferred to CIDCO .
- **1974:** 442 hectares acquired, 900 hectares voluntarily surrendered, 3690 hectares Govt. land transferred to CIDCO.
- **1975:** 438.39 hectares acquired, 3733 hectares Govt. land transferred to CIDCO.
- **1977, 30th September:** 2245 hectare land acquired, 3737 ha transferred
- **1980:** 219.47 hectares land acquired.
- **1985:** 740.35 hectares land acquired.
- **1998:** 3532.40 hectares land acquired.
- **Till 1991 January:** Total land acquired 19,135 hectares.

EVOLUTION OF CIDCO

- **1970, 17th March:** CIDCO established as a subsidiary of SICOM.
- **1970, 24th March:** Senior IAS officer Mr. J. B. D'Souza appointed as MD, CIDCO.
- **1972 June:** CIDCO starts Bus services between Thane and Dadar Railway Station.
- **1973 October:** The New Bombay Draft Development Plan (DDP) published.
- **1976, 30th March:** CIDCO incorporated as a company wholly owned by the State Government.
- **1979, 15th November:** CIDCO Transport Corporation as subsidiary company established.
- **1980, 1st April:** CIDCO Transport Corporation changed to Bombay Metropolitan.

TRANSPORT CORPORATION (BMTC)

- **1984, 9th February:** Three unions of BMTC i.e. Maharashtra General Kamgar Union, Shramik Sena and CIDCO Employees Union call strike without notice.
- 1984, 13th February: The unions gave the call for indefinite strike.
- **1984, 27th March:** CIDCO applies for closure of BMTC.
- **1984, 24th May:** Government grants closure of BMTC.
- **1986, March:** BMTC filed a plea in Bombay High Court to wind up the company.
- **1986 November:** The HC appoints Official Liquidator.
- **1987, 10th April:** Bombay High Court (company judge) dismisses CIDCO plea for the BMTC closure.
- **1987, 20th November:** The Appellate Side of the High court granted the stay and directed the official liquidator to continue having custody of the assets of the BMTC.
- **1983:** CIDCO Bhavan constructed near Konkan Bhavan.
- **1988:** Taxi and auto-rickshaw services introduced in the Navi Mumbai periphery.
- **1994:** CIDCO Bhavan buildings completed.
- **2001, May:** CIDCO invited by the government of newly-constituted Chhattisgarh State to develop its capital city Naya Raipur.
- **2002, December:** SAP system launched in CIDCO in coordination with WIPRO.
- **2004:** GIS training by NICMAR started in CIDCO.

HOUSING PROJECTS

- **1987, June-July:** Demand Registration Survey for housing conducted in Vashi, Belapur, Nerul, New Panvel, Airoli, Koparkhairane and Kalamboli, 54,963 applications received.
- **1987:** The Board of Directors decided to appoint developers to construct more housed to meet the growing demand and appoint Construction Management Consultants for supervision.
- **1988:** The World Bank financed Bombay Urban Development Project (BUDP) of Mass Housing Scheme for 20,000 tenements taken up in Airoli and Koparkhairane nodes.
- **1998, February:** Board approved the proposal for allotment of residential

plots to cooperative housing societies .

- **1989, 5th September:** the State Government approves CIDCO's Housing Plot Allotment Policy; sets reservations for the deserving groups i.e. SC/ST, sportsmen, artists, ex-servicemen, freedom fighters etc; makes 15-year stay in Maharashtra a mandatory condition.
- **1989, December:** Advertisement published for allotment of 250 society plots
- **1991:** The World Bank-aided BUDP II project of 5000 Site and Service houses completed, houses allotted to Mathadi workers of APMC at Koparkhairane.
- **1991:** BUDP III project launched in Nerul, Kharghar, Kalamboli and New Panvel, 11,238 serviced residential sites included 7120 core units for urban poor.
- **1991:** Construction completed of 10,000 residential units, including 6000 core units at Ghansoli and Owe in Kharghar node.
- **1991:** The first Higher Income Group modern housing scheme, Seaswoods Estate NRI Complex planned in Nerul node.
- **1993:** Construction started for the 1,536-apartment Seawood Estate designed by eminent architect Hafeez Contractor.
- **1995 September:** Scheme to allot plots for Housing Societies launched, 8,746 applications received.
- **2000:** The 1562-apartment Millennium Towers, the first high-tech housing complex launched.
- **2001, 27th October:** A housing scheme with innovative concept of 5/3/2% rebate in rates announced for unsoold houses in Nerul and Sanpada.
- **2001:** 480-tenement Nivara project launched at New Panvel 2002 - Additional 240-tenement 'D' condominium of Gharkul project started.
- **2001:** The 1456-tenement Spaghetti project for MIG designed by Hafeez Contractor launched.
- **2002:** Construction for 3168-tenement low-cost housing designed by Hafeez Contractor at Ghansoli Sector 7 undertaken .
- **2002:** The 3236-tenement LIG/MIG Gharonda launched I Ghansoli, Sector 9.
- **2002:** The 480-tenement Nivara project houses handed over
- **2002,** 8th March: Chief Minister Vilasrao Deshmukh performed bhoomi puja of 240-tenement Gharkul housing scheme

- **2002, 13th July:** Chief Minister Vilasrao Deshmukh performed bhoomipuja for 1456-tenement Speghetti housing project in Kharghar node
- **2002, 25th September:** NCP chief Sharad Pawar performed bhoomipuja for Housing project for Mathadis
- **2013, 16th January:** CIDCO launched the 1224-apartment Valleyshilp housing project for MIG and HIG was launched, in Sector 36, Kharghar
- **August 2014:** Swapnapurti, housing project of 3152-tenements for EWS and LIG was launched in Sector 36, Kharghar

INTERNATIONAL AIRPORT

- **1992:** CIDCO proposes 'city aerodrome' with a vision to upgrade it into the international airport after five years from its becoming operational; techno-economic feasibility study carried out through consultants.
- **1994:** Rail India Technical and Economic Services (RITES) carries study for Traffic on behalf of CIDCO; the report preferred Navi Mumbai site for better connectivity through road, rail and water.
- **1995:** The Board of Directors sends proposals to the ministries of Civic Aviation and Defence for the airport.
- **1997, February 17 & 18:** CIDCO makes presentation on the domestic airport upgradable to the international airport in the first-ever 'Advantage Maharashtra' the foreign investors conference held in Mumbai.
- **1997, 28th May**: CIDCO submitted the proposal of the 350-hectare domestic airport to the State Government.
- **1997:** Tenders were invited to develop the airport on Built Operate and Transfer (BOT) basis at the estimated cost of ₹ 4000 crore at the time, four international players including airport companies of Frankfurt, Zurich and Singapore responded. They raised two major issues of contention.
- **1997 November:** Ministry of Civil Aviation (MoCA) constituted a committee to examine the various sites for a second airport in Mumbai Metropolitan Region (MMR) considering that the projected capacity of the Mumbai Metropolitan Region would reach 100 (MPPA)–Millennium Passengers Per Annum by 2030 and that the Chhatrapati Shivaji International Airport (CSIA), Mumbai has the ultimate air traffic capacity of 40 MPPA.
- **2000 June:** The MoCA committee recommended the Rewas-Mandawa site for the second airport in the MMR with one runway; the MoCA panel got restructured with the State secretary for Industries and Managing Director of

CIDCO as the State Government nominees, the committee identified two more locations - Navi Mumbai and Mahapan at Sindhudurg district besides Revas-Mandwa, Navi Mumbai site was considered technically and financially viable, environmentally less disturbing and supported by the local people.

- **2000, 16th September:** CIDCO, revising its airport proposal by accommodating second runway as per the norms of International Civil Aviation Organisation and subsequent SWOT analysis, made a presentation to the State Government in a meeting attended by the senior officials of the MoCA and Airport Authority on India.
- **2000:** CIDCO carried out One Dimension Mathematical (Hydraulic) Model Study through Central Water Power Research Station (CWPRS) to assess the techno-feasibility of training the Gadhi River and diversion of Ulwe River as well as flood and flow condition in Panvel creek in wake of the construction of airport; the study inferred that training of Gadhi River and diversion of Ulwe River was feasible and the flood level in Panvel Creek as well as Taloja, Kasadi Gadhi, Kalundre and Ulwe rivers would remain unchanged except for a slight relief in upper reach of Gadhi and Kalundre; it also inferred that the construction of airport will not result in any flood to adjoining area of Panvel, Kalamboli Kamothe, Kharghar and Belapur.
- CIDCO carried out studies for Traffic Review and Forecast, Mumbai Airport Saturation, Navi Mumbai Traffic Forecast, Navi Mumbai Land Access, Airport Layout Plan and Facilities, Aeronautical, Environment, Geological Hydraulic Study, Geo-technical Analysis as well as the Project Cost and Financial Analysis.
- **2001:** The State Government forwards the reports to the MoCA, recommending the Navi Mumbai site for development of the second airport for MMR.
- **2003, 5th December:** The state Urban Development Department reverts on CIDCO's 1997 proposal with some queries, one of them regarding the ownership of the airport land. CIDCO replied with the information that major portion of the airport land is in CIDCO's possession and it required a small chunk of land that is owned by villagers.
- **2009 February:** MOEF directed CIDCO to obtain approval from The Mumbai High Court for amendment of CRZ notification.
- **2009 April:** The Mumbai High Court allowed the Prayer of CIDCO / GoM for amendment of CRZ Notification of 1991.

- **2009 May:** MoEF issued order amending the CRZ Notification of 1991 permitting Greenfield airports in CRZ areas, subject to environmental safeguards.
- **2010 October:** The Ministry of Defence granted defence clearance to NMIA project.
- **2010 November:** Environmental and CRZ clearance for NMIA project granted by MoEF.
- **2011 January:** CIDCO Board approves modifications to the Navi Mumbai Development Plan (NMDP) for airport zone and submits it to MoCA.
- **2011 April:** The State Government constituted the Project Monitoring Committee (PMC) for NMIA to monitor implementation of the project and give guidelines on project related issues.
- **2011, May:** The Steering Committee of MoCA grants approval to Revised Master Plan for NMIA.
- **2011 May:** GoM constitutes the High Level Advisory and Monitoring Committee to monitor and to advise on environmental issues.
- **2011 December:** The Project Monitoring and Implementation Committee (PMIC) gave 'in-principle' approval to the draft Request for Qualification (RFQ) Document for the Navi Mumbai Airport .
- **2012, 10th May:** MoEF grants CRZ clearance to the airport.
- **2013 January:** The PMIC holds a meeting to discuss the critical activities of project, bid process and the draft RFQ document for NMIA Project.
- **2013, 21st November:** The PMIC approved the draft RFQ document for NMIA and recommended the document to MoCA for final approval.
- **2013, 29th October:** The Mumbai High Court granted permission to CIDCO for removal of mangroves from the airport project area.
- **2013, December:** The MoEF accorded Stage I Forest Clearance to NMIA project.
- **2013, 20th December:** The Steering Committee, NMIA recommended the approval of the draft RFQ.
- **2013, December:** The MoCA accorded approval to the NMIA RFQ document.
- **2014, 29th January:** The CIDCO Board of Directors approved the commencement of the bid process for NMIA by inviting the RFQ.
- **2014, 5th February:** The Global Tender Notice inviting RFQ published in leading National and International news papers.

- **2014, 2nd April:** RFQ pre-application conference held.
- **2014 July:** MoCA approved amendments to RFQ document; Addendum 1 to RFQ issued.
- **2014 August:** Addendum 2 to the RFQ issued.
- **2014 October:** Addendum 3 to RFQ issued extending the Application Due date to 10th Dec. 2014.
- **2014 December:** Addendum 4 to RFQ issued extending the Application Due date to 28th January 2015.
- **2014 December:** MoCA approves shared till for NMIA.

METRO RAILWAY

- **2009:** Delhi Metro Rail Corporation was appointed a consultant for Navi Mumbia Metro project; 6 Metro Rail corridors identified i.e. Nerul-Ranjanpada-Uran (28 km), Ranjanpada-Kharghar-Seawood (14 km), Belapur-Taloja-Kalamboli-Khandeshwar Rly St.-NM Airport (22 km), Vashi-Nerul-Panvel (25 kms), Dighe-Airoli-Rabale-Turbhe-Belapur (20 km), Vashi-Ghansoli-Mahape (9 km).
- **2009 July**: Approval accorded to Metro Rail project in three phases: Phase I – Belapur-Pendhar (10.15 kms), Phase II – Khandeshwar-Taloja MIDC (8.15 kms), Phase III – Pendhar-Taloja interconnection (3.5kms).

NEW CITY'S DEVELOPMENT

- **1973, 20th December:** the DDP of New Bombay presented to Prime Minister Indira Gandhi by Maharashtra Urban Development Minister Dr. Rafiq Zakaria.
- **1973:** The first School building constructed by CIDCO in Sector 1, Vashi.
- **1975:** Construction of 858 houses for Konkan Bhavan employees started.
- **1975, 10th October:** The DDP of New Bombay submitted to the State Government.
- **1975:** General Development Control Regulations (GDCR) issued.
- **1992, 1st January:** Navi Mumbai Municipal Corporation established for North side nodes up to Belapur following the State Government's notifications in 1990.
- **1999, March:** Population in Navi Mumbai touches 10,00,000 mark.
- **1990:** Water pipeline of 800-mm laid from Kalamboli to Belapur.
- **1990:** Work of laying pre-stressed concrete pipeline of 1200-mm and

900-mm started between reservoir at Shil and Koparkhairane for additional 35 MLD supply from MWSSB Patalganga.

- **1990:** The State government allotted 100-MLD water for Navi Mumbai from Hetwane Dam.
- **2006, May 5:** Joint Managing Director Deepak Kapoor inaugurated Valley Park project spread around the Parsik Hill area.
- **2006, May 19:** VC & MD Ashok Sinha laid foundation-stone of Solid Waste Management Project at Chal village Taloja.
- **1996:** Development of International Info-tech Park at Vashi started.
- **1997:** Hardware Park at Dronagiri planned.
- **1997:** Industrial Park at Kalamboli planned for Engineering, Lather, Plastic, Garments, Electrical/Electronics industries.
- **1998, June 14:** International Info-tech Park, Vashi inaugurated.
- **1999:** International Technology Centre at Belapur planned.
- **1999:** Special Economic Zone approved by the Central Government near Jawaharlal Nehru Port in Dronagiri node1190 hectare area identified.
- **2000, 5th May:** CIDCO appointed Nodal Agency by the State Government to Implement Special Economic Zone (SEZ) in Navi Mumbai.
- **2000:** 150-MLD Hetwane Project, CIDCO's first water supply project completed.
- **2001, January:** International Technology Centre, Belapur gets operational.
- **2002, 15th February:** SEZ project comprising 4377 hectares of Dronagiri and three sectors each from Kalamboli and Ulwe nodes approved by the Central Ministry of Commerce.
- **2009:** SEZ cancelled by the State Government.

NODAL DEVELOPMENT

- **1971:** Development works taken up for Vashi node with the construction of 854 houses & 52 shops started.
- **1971:** Development of Belapur node initiated with construction of Panvel Creek Bridge at Belapur to reduced 12 km between Mumbai and Navi Mumbai.
- **1975:** Development work started in the East of Panvel node.
- **1979:** Development work started in the West of Panvel node.
- **1981:** Nerul node taken up for development, 5360 houses planned for different income groups.

- **1983:** Airoli node taken for development.
- **1986:** Development of Kopar Khairane node initiated.
- **1989:** Dronagiri node planned over 2300 hectare to cater to the commercial warehousing and industrial activities of Jawaharlal Nehru Port that was inaugurated on 26th May 1989.
- **1990:** Sanpada node taken up for development.
- **1991:** Dronagiri, Kharghar and Ulwe nodes taken up for development.

PAP' UPLIFTMENT

- **1970:** The first batch of 168 PAPs absorbed in CIDCO.
- **1971:** Sporadic instances of resistance from PAPs reported .
- **1971:** Training Centres at Uran and Panvel for PAPs set up.
- **1972:** 575 PAPs completed training.
- **1975:** 1935 PAPs trained, 2323 given jobs.
- **1977:** 2315 PAPs trained, 3755 got jobs.

R & R PACKAGE FOR PAPS

- **2011 May:** Committee constituted under the Chairmanship of Divisional Commissioner, Konkan Division, to finalise R & R package and land acquisition.
- **2013, 6th February:** Presentation made to the Chief Minister on the proposed land acquisition model for NMIA by CIDCO in the presence of the PAP delegation.
- **2013, 11th November:** High-level meeting held between the Chief Minister and representatives of Airport Project Affected Persons to discuss the Land acquisition model and R and R policy entitlements prepared by; the PAPs agreed for the same.
- **2014 March:** GoM approved the Land Acquisition and R&R package for Navi Mumbai Airport and allied activities.
- **2014 May:** The State Government approved R&R package for persons residing on Government land in airport core area.
- **2014 August:** First Lottery conducted for allotment of 22.5% plots in Pushpak Nagar to land owners in airport project area.
- **2014, September:** Second Lottery conducted for allotment of 22.5% plots in Pushpak Nagar to land owners in airport project area.
- **2014, 24th December:** Computerized Draw for 22.5% Land Allotment in

Pushpak Nagar and R&R Package Land Allotment for Chinchpada village held.

RAILWAY NETWORK

- **1978:** CIDCO approached the Planning Commission and the Railway Ministry for extension of railway line from Mankhurd to Panvel via Vashi.
- **1979:** Railway Ministry submitted the Techno-economic Feasibility Report on Mankhurd-Panvel to the State Government.
- **1983:** Mankhurd-Vashi-Belapur rail corridor approved by the Central government.
- **1985** -The 24-km single line Kalwa-Turbe-Sanpada goods corridor development initiated planned to be completed by 1988.
- **1985:** Turbhe–Sanpada link work taken up.
- **1985:** The 17-km Mankhurd–Belapur via Vashi and Nerul approved by the Railway Ministry.
- **1985:** Thane Creek Railway Bridge contract awarded by the Central Railway.
- **1986:** Work begins for Mankhurd–Belapur corridor via Vashi and Nerul.
- **1986:** Work for Thane Creek Railway Bridge started.
- **1986:** New 6-lane road bridge over creek commenced.
- **1987:** Belapur-Panvel corridor work began, the task assigned to IRCON Ltd.
- **1989:** Construction of commercial complexes over Vashi, Sanpada, Juinagar, Nerul and Belapur began in co-operation with the Railways.
- **1992, 9th May:** Mankhurd-Vashi corridor inaugurated by President Mr. R. Venkatraman; Total construction cost ₹ 287 crore, CIDCO shared 67% on behalf of the State Government.
- **1993, 16th March:** Vashi-Belapur line commissioned.
- **1994:** Belapur-Panvel Corridor development started.
- **1995, 25th January:** Belapur- Khandeshwar line commissioned by Railway Minister Mr. Ram Naik.
- **1997:** Belapur-Panvel double line project and Thane-Turbhe-Nerul-Vashi project sanctioned by Railway Ministry.
- **1998, 29th June:** Belapur-Panvel line commissioned.
- **2000, 15th May:** Chief Minister Vilasrao Deshmukh performs bhoomipuja of Kopar Khairane railway station construction.
- **2001, 9th February:** Chief Minister Vilasrao Deshmukh inaugurates Kopar Khairane railway station.

- **2000:** CIDCO awards construction work for Airoli, Ghansoli, Kopar Khairane and Turbhe.
- **2000, 14th April:** Belapur- Panvel double-line commissioned.
- **2004, 12th June:** Seawoods Railway Station commissioned.
- **2006:** Kalwa-Turbhe-Juinagar-Nerul corridor work undertaken
- **2006, 12th June:** Kharghar Station inaugurated.
- **2008, 21st April:** Agreement signed with Larsen and Toubro for the development of Seawoods Railway Station Complex.

ROAD NETWORK

- **1971:** Construction work started for Panvel Creek Bridge at Belapur.
- **1979, 21st February:** Panvel Creek Bridge opened for public use.
- **1991:** Turbhe junction fly-over taken up for construction.
- **2000,15th May:** Chief Minister Vilasrao Deshmukh inaugurated construction of Road over Bridge at Mahape connecting MIDC.
- **2000, 25th July:** Minister of State for Urban Development Minister commissioned Road over Bridge over Belapur-Panvel railway line near Khandeshwar; total project cost ₹ 17 crore.
- **2000, 13th November:** Minister of State for Urban Development commissioned underpass at Sion-Panvel Expressway fronting Sanpada Station.
- **2001, 9th February:** Vashi-CBD 8-km arterial road commissioned by Chief Minister Vilasrao Deshmukh.
- **2001:** Vijay Marg and Matheran Marg in Panvel completed.

WHOLESALE MARKETS

- **1971:** Planning work for Integrated Agriculture Produce Market at Turbhe commenced.
- **1979:** Work for wholesale steel market-cum-warehousing complex started in Kalamboli on 275 hectare land.
- **1980, February:** The 238-shop Onion and Potato wholesale market Phase I taken up for construction at Turbhe and got completed in the same year .
- **1982:** Construction of Truck Terminal near onion potato market completed over 8.5 hector.
- **1985:** Wholesale Steel Market, Stockyard and General Warehousing Complex completed.

- **1989, October:** Kalamboli wholesale Iron and Steel Market Complex inaugurated.
- **1990:** Construction starts in APMC for Banking Complex consisting 7 banks.
- **1991, February:** The 660-shop-cum-godowns for Wholesale Processed Agriculture Produce Market in Sugar, Gur (Jaggery), Condiments, Spices, Oils, Coconut, Dry-fruits, Flour etc got ready in Phase II APMC I.
- **1993, May:** The 420-shop-cum-godowns for Wholesale Grains Market in Grains, Rice, Oilseeds got ready in Phase II APMC II.
- **1995, 26th January:** Chief Minister Sharad Pawar inaugurated wholesale fruit and vegetables market on the 17.15 hectare land allotted by CIDCO; it was constructed by the Bombay APMC.
- **1996, February:** The 1029- shop-cum-godowns wholesale Fruits and Vegetables markets got ready in Phase I APMC II.
- **1996, March:** The 936- shop-cum-godowns wholesale Fruits and Vegetables markets got ready in Phase I APMC II.

METRO RAILWAY

- **2009:** Delhi Metro Rail Corporation was appointed a consultant for Navi Mumbia Metro project; 6 Metro Rail corridors identified i.e. Nerul-Ranjanpada-Uran (28 km), Ranjanpada-Kharghar-Seawood (14 km), Belapur-Taloja-Kalamboli-Khandeshwar Rly St.-NM Airport (22 km), Vashi-Nerul-Panvel (25 kms), Dighe-Airoli-Rabale-Turbhe-Belapur (20 km), Vashi-Ghansoli-Mahape (9 km).
- **2009 July:** Approval accorded to Metro Rail project in three phases: Phase I – Belapur-Pendhar (10.15 kms), Phase II – Khandeshwar-Taloja MIDC (8.15 kms), Phase III – Pendhar-Taloja interconnection (3.5 kms).

* * *

AMPHITHEATRE : A huge open-air theatre at Central Park.

LIST OF VILLAGES ACQUIRED FOR NAVI MUMBAI CITY PROJECT

SR. NO.	PANVEL TALUKA (EXCL NMMC)	SR. NO.	THANE TALUKA	SR. NO.	URAN TALUKA
1	Ambetkhar	1	Airoli	1	Belandkhar
2	Asudgaon	2	Bonsari	2	Bendkhal
3	Bambavi	3	Borivali	3	Bokadvira
4	Belpada	4	Chanchavali	4	Boripakhadi
5	Chal	5	Darave	5	Chanje
6	Dapoli	6	Dighe	6	Chirale
7	Gavhan	7	Dive	7	Dhutum
8	Kalamboli	8	Ghansoli	8	Dongari
9	Kalundre	9	Gothivali	9	Funde
10	Kamothe	10	Ilthan	10	Jasai
11	Karanjade	11	Juinagar	11	Jaskhar
12	Kharghar	12	karave	12	Kaladhonda
13	Kharkopar	13	Khairane	13	Karal
14	Kopar	14	Koparkhairane	14	Kauli Belandkhar
15	Kundevahal	15	Kukshet	15	Kauli Belang
16	Manghar	16	Mahape	16	kegaon
17	Navade	17	Nerul	17	Mhatavali
18	Nhave	18	Pavane	18	Muthekhar
19	Owale	19	Rabale	19	Nagaon
20	Owe	20	Sanpada	20	Navghar
21	Padaghe	21	Sarole	21	Pagote
22	Padeghar	22	Savali	22	Panaje
23	Pale Khurd	23	Shahabaj	23	Paundkhar
24	Pargaon	24	Shiravane	24	Ranwad
25	Pargaon Dungi	25	Sonkhar	25	Savarkhar
26	Pendhar	26	Talavali	26	Shemtikhar
27	Roadpali	27	Tetavali	27	Sheva
28	Sonkhar	28	Turbhe	28	Sonari
29	Taloja	29	Vashi	29	Belandkhar
30	Targhar				
31	Tembhode				
32	Tondare				
33	Ulwe				
34	Vadghar				
35	Vaghivali				
36	Vahal				
37	Valavali				

APPENDIX - III

MILESTONES IN NEW TOWNS' DEVELOPMENT

SR. NO.	NEW TOWN	AREA OF JURISDICTION	DATE OF APPOINTMENT	PROJECT STATUS
1	New Aurangabad	1011.96 Ha.	30th October 1972	Completed on 1st April 2006
2	Aurangabad Fringe Area	15184 Ha.	3rd October 2006	
3	Latur Fringe Area	25.894 Ha.	3rd January 2008	
4	New Nashik	398 Ha.	27th January 1975	Completed in 1986
5	New Nanded	250 Ha.	October 1974	Completed on 7th October 2005
6	New Jalana	470 Ha.	18th June 2008	
7	Waluj Mahanagar	8571 Ha.	7th October 1991	
8	Nagpur Meghdoot	9130 Ha. initially 1002 Ha. final	25th October 1996	Area handed over to MIHAN 1st April 2010
9	Vasai- Virar	38000 Ha.	14th May 1990	Completed on 7th July 2010
10	Oros	1020 Ha.	1989	
11	Khopta		28th March 2010	
12	Chikhaldara Hill Station	1953	10th February 2006	

AN ART DECO BUILDING : Buildings by private realtors at the aesthetic value of the city.

APPENDIX - IV

LIST OF HOLDING /DETENTION PONDS IN NAVI MUMBAI

SR. NO.	LOCATION (NODE / SECTOR)	TYPES OF POND	AREA (HA)
1	Airoli, Sector 19	Holding Pond	16.00
2	Airoli, Sector 17 & 18	Holding Pond	14.00
3	Koparkhairne, Sector 19 & 20	Holding Pond	3.20
4	Koparkhairne, Sector 14	Holding Pond	9.00
5	Vashi, Sector 00 (Behind Rail.St.)	Holding Pond	77.00
6	Vashi, Sector 31	Holding Pond	4.50
7	Vashi, Sector 10A	Holding Pond	15.00
8	Vashi, Sector 8	Holding Pond	2.30
9	Vashi, Sector 11 & 12	Holding Pond	24.00
10	Sanpada	Holding Pond	22.00
11	Sanpada	Holding Pond	11.06
12	Nerul, Sector 32	Holding Pond	3.17
13	Belapur, Sector 12	Holding Pond	5.50
14	Belapur, Sector 14	Holding Pond	0.89
15	Belapur, Sector 15A	Holding Pond	4.60
16	Dronagiri	Holding Pond	60.29
17	Dronagiri	Holding Pond	52.98
18	Dronagiri	Holding Pond	30.35
19	Dronagiri	Holding Pond	21.56
20	Dronagiri	Holding Pond	39.28
21	Dronagiri	Holding Pond	4.52
22	Panvel (E), Sector 14	Holding Pond	4.00
23	Panvel (W), Sector 17	Holding Pond	6.00
24	Panvel (W), Sector 16	Holding Pond	5.30
25	Panvel (E), Sector 8 & 9	Holding Pond	2.70
26	Kalamboli, Sector 21	Holding Pond	14.82
27	Kalamboli, Sector 7	Holding Pond	13.40
28	Kalamboli, Sector 19	Holding Pond	1.50
29	Kalamboli, Sector 16E (Pond)	Holding Pond	0.79
30	Kalamboli, Sector 7E	Holding Pond	3.63
31	Kalamboli, Sector 9	Holding Pond	7.73
32	Kharghar, Sector 8	Holding Pond	2.97
33	Kharghar, Sector 10	Holding Pond	2.96
34	Kharghar, Sector 17	Holding Pond	24.22
35	Kharghar, Sector 25	Holding Pond	12.13
36	Kharghar, Sector 26	Holding Pond	22.65
37	Kharghar, Sector 40	Holding Pond	13.85
38	Kharghar, Sector 22	Detection Pond	30.00
39	Kharghar, Sector 36	Detection Pond	27.00
40	Kharghar (Navade Phase II)	Detention Pond	2.72

ANNEXTURE - I

TENURES OF CHIEF MINISTERS OF MAHARASHTRA

SR. NO.	NAMES	FROM	TO
1.	Yashwantrao Chavan	1 May 1960	19 November 1962
2.	Marotrao Kannamwar	20 November 1962	24 November 1963
3.	P. K. Sawant	25 November 1963	4 December 1963
4.	Vasantrao Naik	5 December 1963	1 March 1967
5.	Vasantrao Naik	1 March 1967	13 March 1972
6.	Vasantrao Naik	13 March 1972	20 February 1975
7.	Shankarrao Chavan	21 February 1975	16 April 1977
8.	Vasantdada Patil	17 April 1977	2 March 1978
9.	Vasantdada Patil	7 March 1978	18 July 1978
10.	Sharad Pawar	18 July 1978	17 February 1980
11.	President's rule	17 February 1980	8 June 1980
12.	Abdul Rehman Antulay	9 June 1980	12 January 1982
13.	Babasaheb Bhosale	21 January 1982	1 February 1983
14.	Vasantdada Patil	2 February 1983	1 June 1985
15.	Shivajirao Patil-Nilangekar	3 June 1985	6 March 1986
16.	Shankarrao Chavan	12 March 1986	26 June 1988
17.	Sharad Pawar	26 June 1988	25 June 1991
18.	Sudhakarrao Naik	25 June 1991	22 February 1993
19.	Sharad Pawar	6 March 1993	14 March 1995
20.	Manohar Joshi	14 March 1995	31 January 1999
21.	Narayan Rane	1 February 1999	17 October 1999
22.	Vilasrao Deshmukh	18 October 1999	16 January 2003
23.	Sushilkumar Shinde	18 January 2003	30 October 2004
24.	Vilasrao Deshmukh	1 November 2004	4 December 2008
25.	Ashok Chavan	8 December 2008	15 October 2009
26.	Ashok Chavan	7 November 2009	9 November 2010
27.	Prithviraj Chavan	11 November 2010	26 September 2014
28.	Vacant	28 September 2014	31 October 2014
29.	Devendra Fadnavis	31 October 2014	Incumbent

(CMS have always held the charge of the Ministry of Urban Development under whose jurisdiction CIDCO, the company owned by the State Government has worked, led by MDs appointed by the cabinet)

ANNEXTURE - II

TENURES OF MANAGING DIRECTORS

SR. NO.	NAMES	FROM	TO
1	Mr. J. B. D'souza	17-03-1970	13-08-1974
2	Mr. P. C. Nayak	16-09-1972	19-05-1974
3	Mr. K. Sivaramakrishnan	19-05-1974	17-04-1975
4	Mr. P. G. Salvi	17-04-1975	07-09-1976
5	Mr. B. C. Cariappa	07-09-1976	18-07-1977
6	Mr. B. K. Halwe	18-07-1977	03-08-1977
7	Mr. B. S. Dhavle	03-08-1977	01-06-1979
8	Mr. L. C. Gupta	01-06-1979	25-08-1982
9	Mr. Shyamkant Mohoni	25-08-1982	02-02-1983
10	Mr. L. C. Gupta	02-05-1983	01-02-1987
11	Mr. K. Nalinakshan	01-02-1987	12-05-1990
12	Mr. Satish Tripathi	12-05-1990	21-06-1990
13	Mr. R. C. Sinha	21-06-1990	26-04-1994
14	Mr. B. B. Sharma	26-04-1994	08-04-1996
15	Mr. K. Nalinakshan	11-04-1996	12-12-1996
16	Mr. V. S. Dhumal	12-12-1996	13-11-1998
17	Mr. A. P. Sinha	13-11-1998	15-06-1999
18	Mr. A. K. Lakhina	15-06-1999	11-02-2003
19	Mr. Anand Kulkarni	11-02-2003	25-04-2003
20	Mr. V. M. Lal	26-05-2003	28-12-2004
21	Mr. Ashok Sinha	28-12-2004	31-05-2006
22	Mr. N. Rama Rao	28-06-2006	31-07-2007
23	Mr. G. S. Gill	31-07-2007	31-3-2012
24	Mr. S. Shahzad Hussain	01-04-2012	03-04-2012
24	Mr. Tanaji Satre	03-04-2012	04-03-2013
25	Mr. Sanjay Bhatia	04-03-2013	13-04-2016
26	Mr. Bhushan Gagarani	13-04-2016	

ANNEXTURE – III

TENURES OF CHAIRMEN

SR. NO.	NAMES	FROM	TO
1	Mr. N. M. Wagle	17-03-1970	22-07-1976
2	Mr. Ajit Kerkar	23-07-1976	04-10-1977
3	Mr. R. D. Bhandare	13-10-1977	09-02-1978
4	Mr. Ram Kapse	14-04-1979	24-04-1980
5	Mr. Suresh Keswani	05-11-1980	19-02-1981
6	Mr. Ram Mahadik	20-05-1982	09-07-1987
7	Mr. A. T. Patil	01-02-1988	10-09-1991
8	Mr. Nakul Patil	17-09-1991	14-03-1995
9	Mr. Narayan Marathe	12-09-1995	18-10-1999
10	Mr. Javed Khan	14-06-2000	13-07-2004
11	Mr. Nakul Patil	14-07-2004	05-01-2005
12	Mr. Nakul Patil	31-08-2006	29-06-2011
13	Mr. Pramod Hindurao	26-08-2011	25-11-2014

ANNEXTURE - IV

TENURES OF CHIEF ARCHITECT & PLANNERS

SR. NO.	NAMES	FROM	TO
1	Mr. M. Y. Thackeray (CAP)	1975	1985
2	Mr. D. G. Parab (CP)	1986	1990
3	Mr. S. B. Gogte (CAP)	1991	1996
4	Mr. A. B. Sapre (CAP)	1997	1997
5	Mr. A. T. Mhaisalkar (CAP)	1997	2004
6	Mr. D. P. Samant (CAP)	2004	2008
7	Mr. D. V. Shekdar (CAP)	2008	2010
8	Mr. M. D. Lele (CP)	2010	2016
9	Mr. Ramesh Dengle	2016	till the date

AMRA MARG : *The flyover parallel to Panvel Creek Bridge connects Belapur to Uran.*

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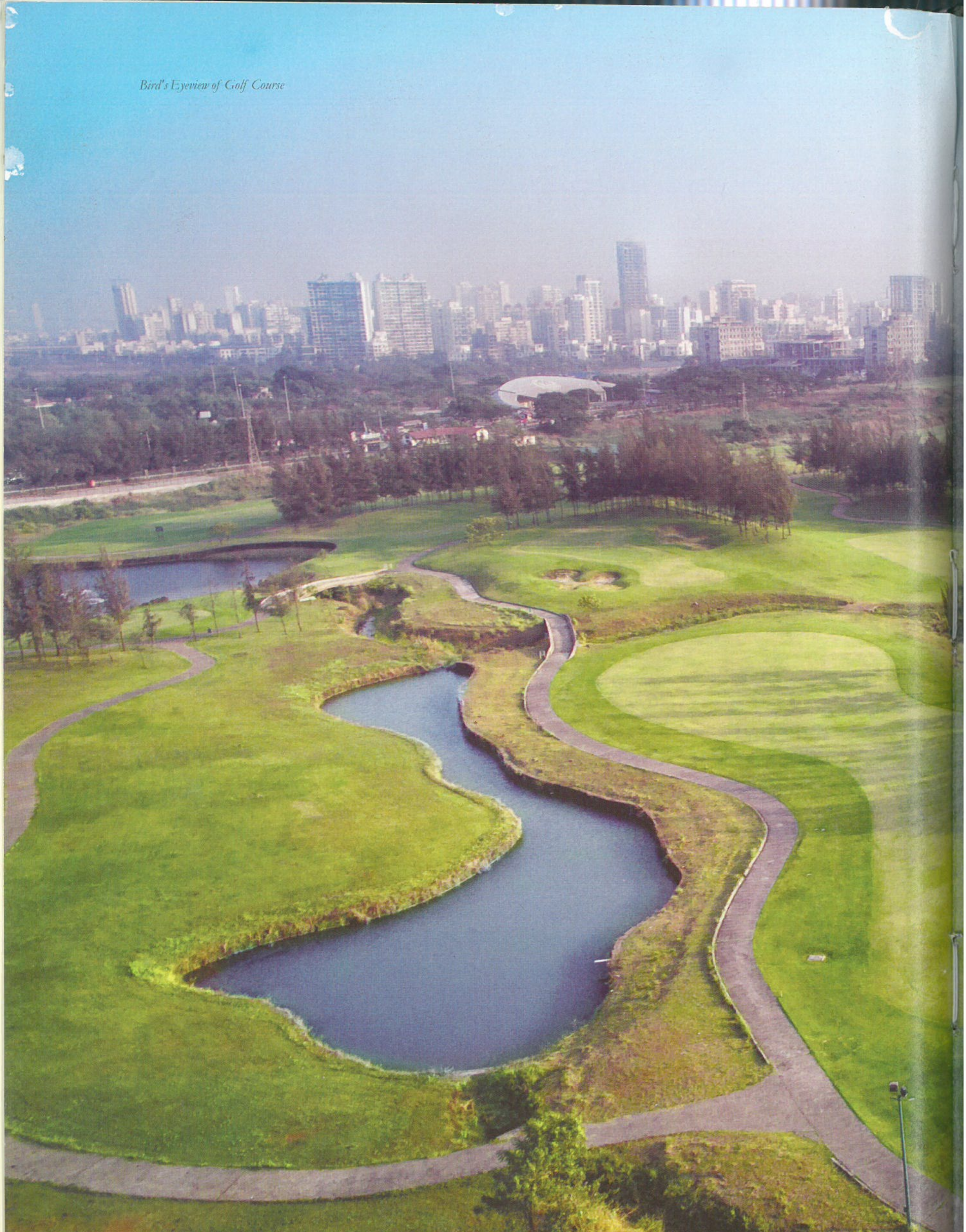
TENURES OF CHIEF ENGINEERS

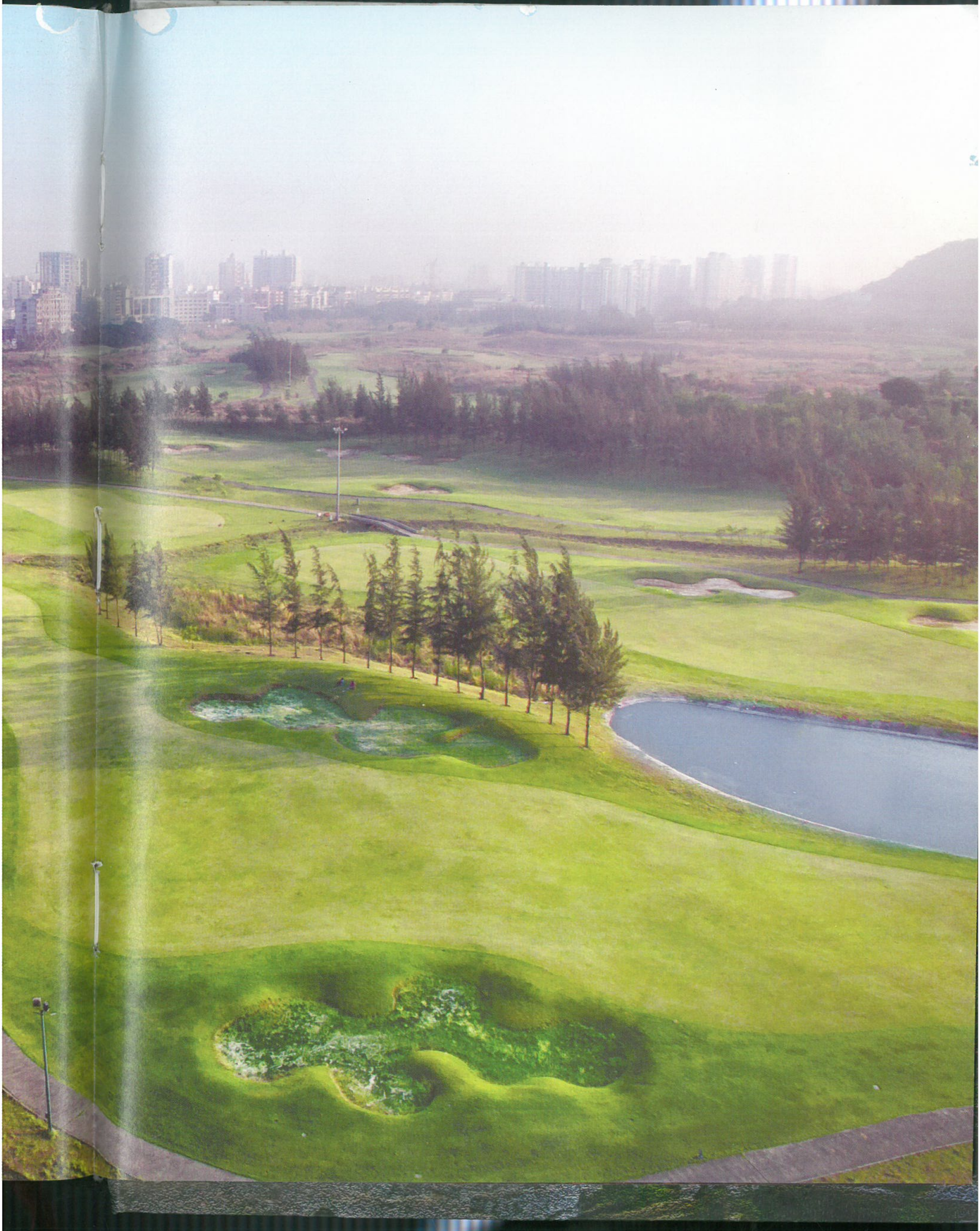
SR. NO.	NAMES	FROM	TO
1	Mr. A. R. Kanga	1970	1979
2	Mr. A. V. Deshmukh	1973	1976
3	Mr. K. Gopalan (contract)	1974	1976
4	Mr. P. S. Ambike	1977	1983
5	Mr. N. N. Javdekar	1983	1984
6	Mr. S. G. Pingle	1984	1997
7	Mr. P. M. Deshpande	1997	2002
8	Mr. A. B. Karweer	2002	2005
9	Mr. A. R. Jambhekar	2005	2006
10	Mr. C. S. Sanghavi	2006	2007
11	Mr. Suhas Thakar	June 2007	Oct. 2007
12	Mr. S. C. Deshpande	Nov. 2007	Jan 2008
13	Mr. A. S. Patil	11-01-2008	27-01-2008
14	Mr. S. C. Deshpande	14-07-2008	31-04-2010
15	Mr. K. Y. Joshi	April 2010	May 2010
16	Mr. A. S. Patil	31-05-2010	31-03-2011
17	Mr. B. B. Mehta	April 2011	August 2011
18	Mr. S. S. Chaudhari	July 2012	Sept. 2017
19	Mr. K. K. Varkhedkar	Sept. 2011	till the date

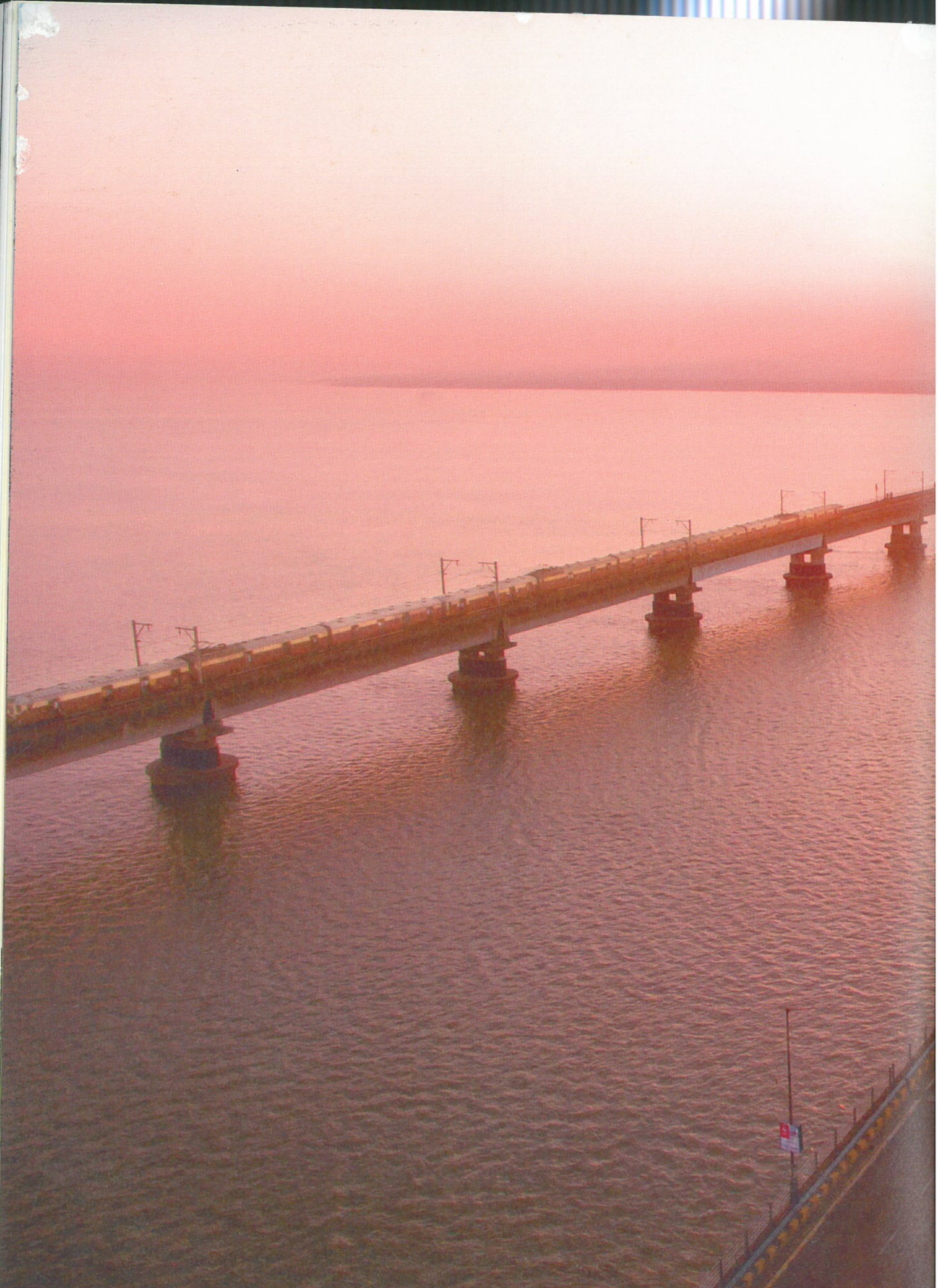
THE HISTORIC GET-TOGETHER

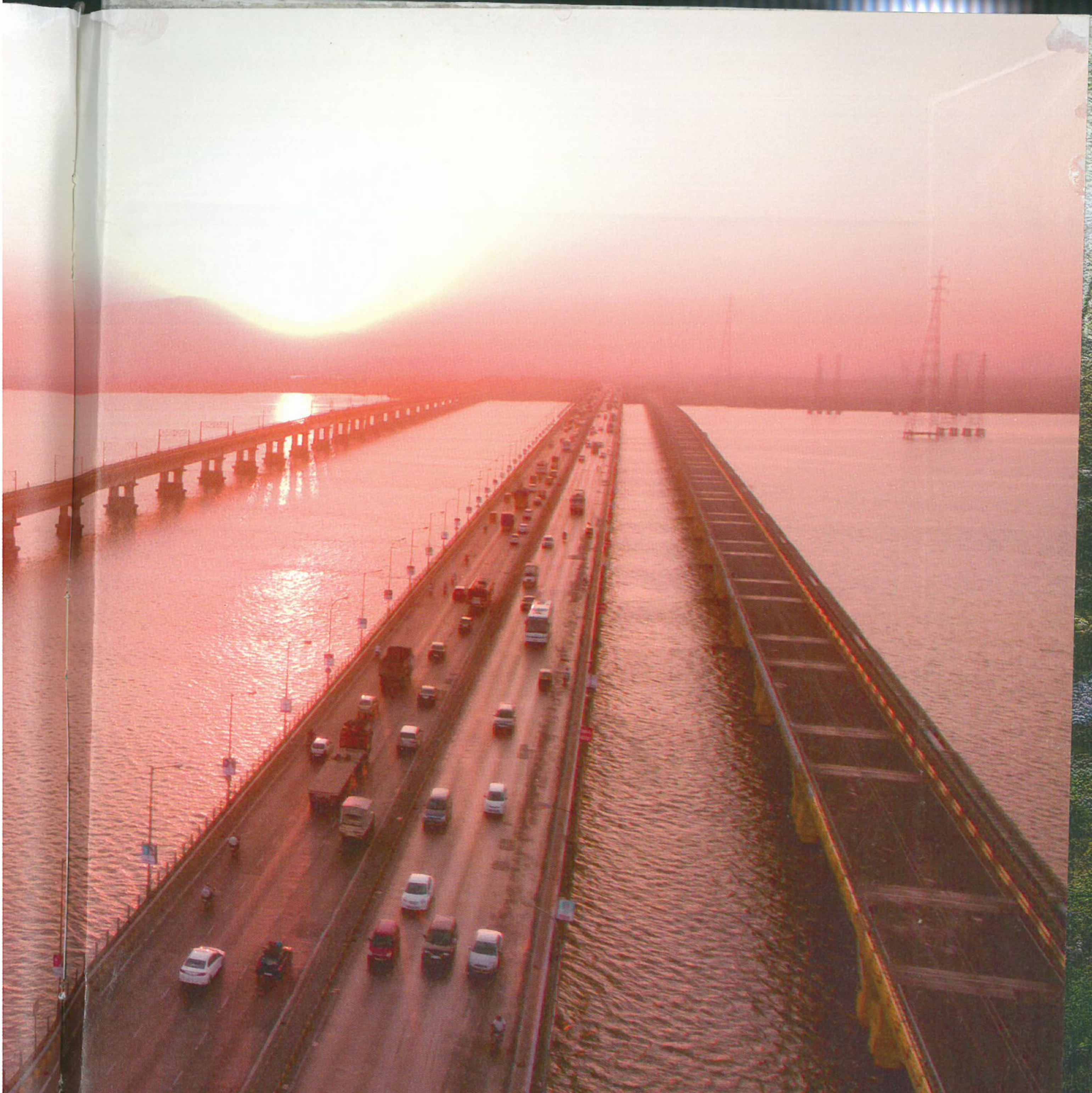
The 21st October 2016 meeting called to give finishing touches to the book draft was attended by Sudheer Brahme (Author), Ramesh Dengale (CAP), Subas Gokhale (Senior Planner), A. N. Sule (Urban Planner & Architect), A. R. Jadhav (Manager Personnel), Ardhendu Bhattacharya (Chief Economist), Shiristh Patel (Director Planning & Works), Ramakant Jha (Head of the Transportation & Communications), P. S. Ambike (Chief Engineer), P. M. Deshpande (Chief Engineer & General Manager, Tech), all formal employees; Keshav Varkhedkar (Chief Engineer), Achyut Palav (Renown Calligrapher & Designer), Dr. Mohan Ninawe (Coordinating Editor & Senior PRO).

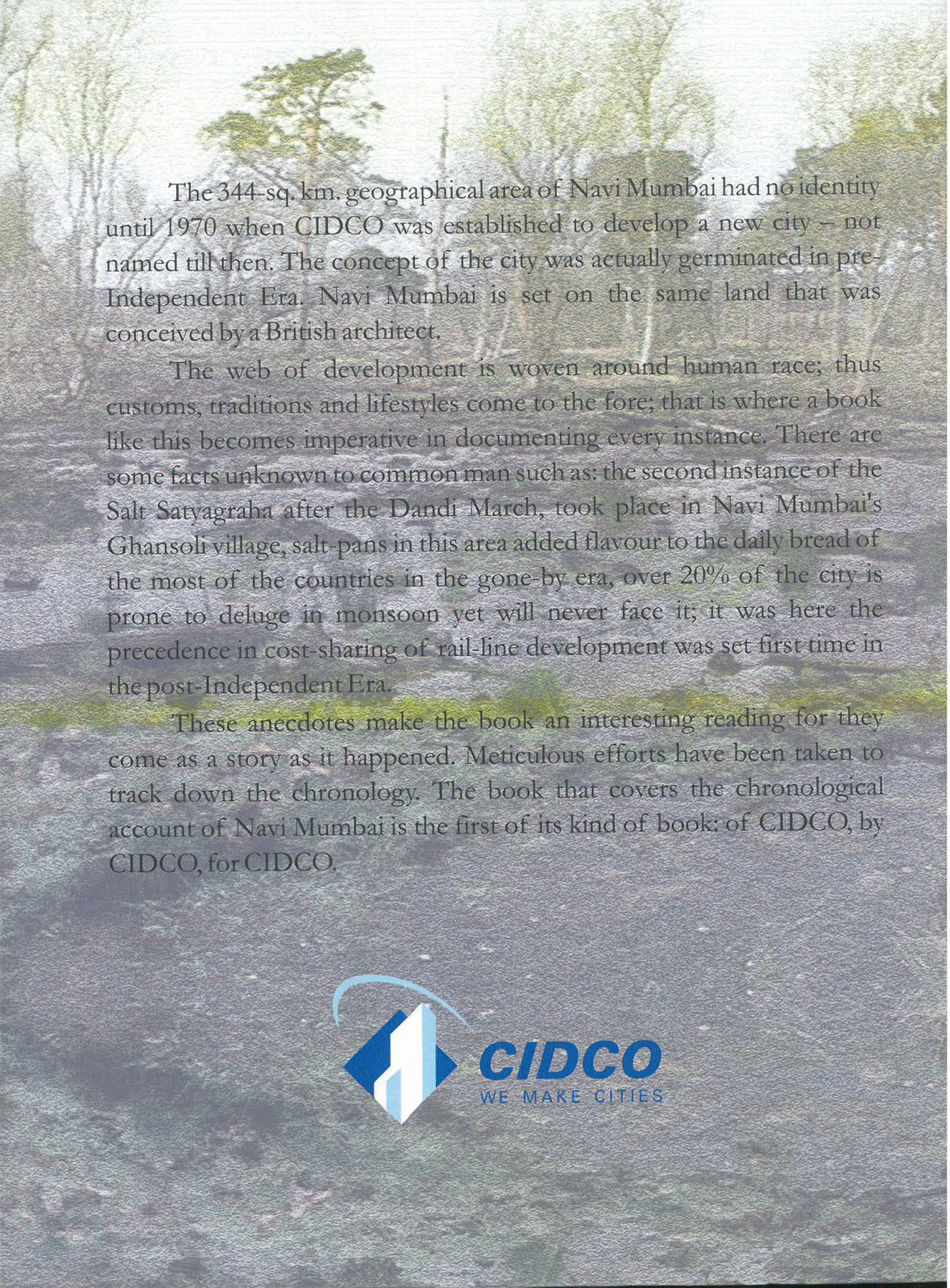


Bird's Eyeview of Golf Course









The 344-sq. km. geographical area of Navi Mumbai had no identity until 1970 when CIDCO was established to develop a new city – not named till then. The concept of the city was actually germinated in pre-Independent Era. Navi Mumbai is set on the same land that was conceived by a British architect.

The web of development is woven around human race; thus customs, traditions and lifestyles come to the fore; that is where a book like this becomes imperative in documenting every instance. There are some facts unknown to common man such as: the second instance of the Salt Satyagraha after the Dandi March, took place in Navi Mumbai's Ghansoli village, salt-pans in this area added flavour to the daily bread of the most of the countries in the gone-by era, over 20% of the city is prone to deluge in monsoon yet will never face it; it was here the precedence in cost-sharing of rail-line development was set first time in the post-Independent Era.

These anecdotes make the book an interesting reading for they come as a story as it happened. Meticulous efforts have been taken to track down the chronology. The book that covers the chronological account of Navi Mumbai is the first of its kind of book: of CIDCO, by CIDCO, for CIDCO.

CIDCO
WE MAKE CITIES